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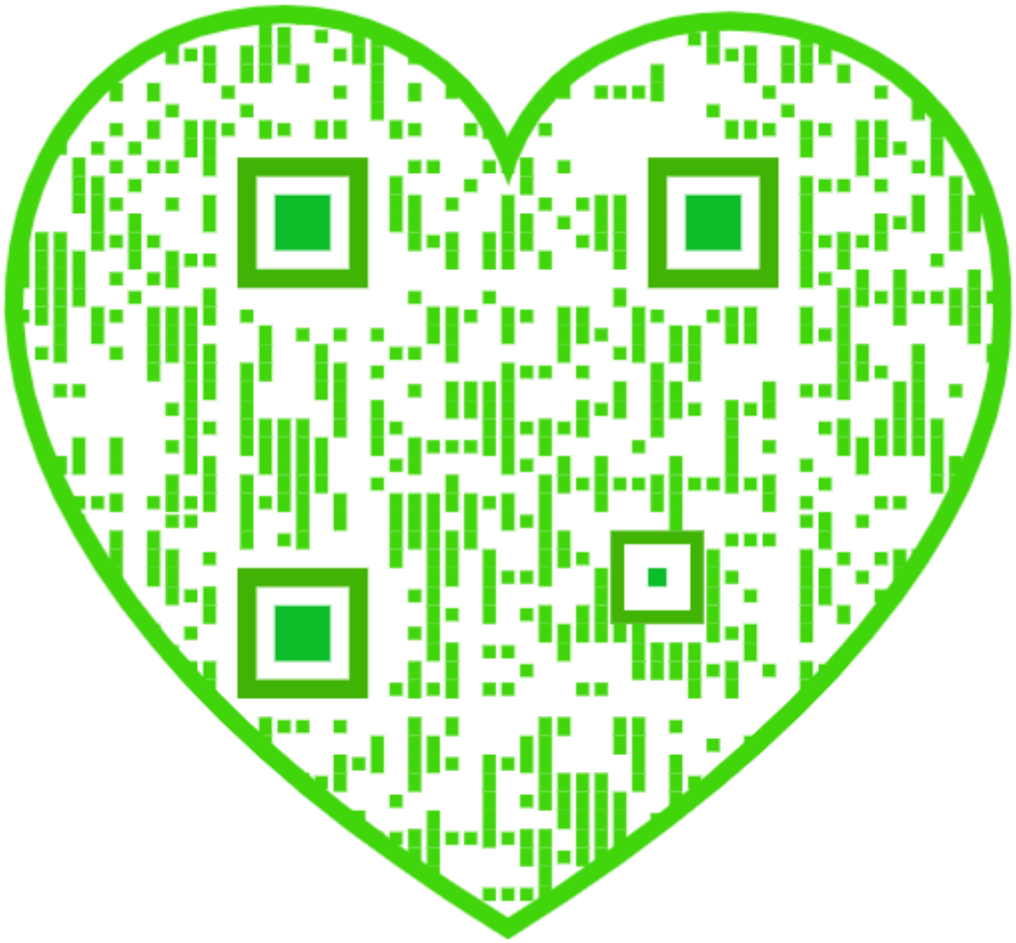

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AND
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EDITED BY

THOMAS WILLIAM COWAN, F.G.S., F.R.M.S., ETC.

AUTHOR OF 'THE BRITISH BEE-KEEPER'S GUIDE BOOK.'

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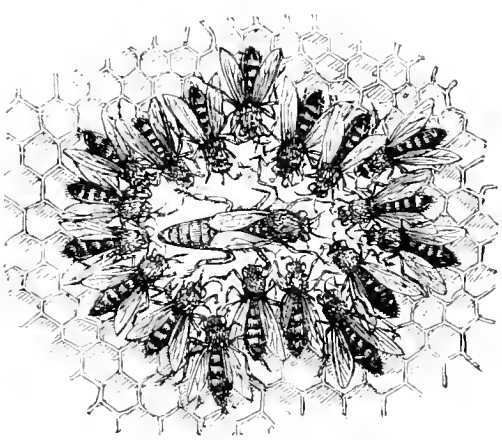

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Editorial, Notices, &c.

TO OUR READERS.

In reply to numerous inquiries, we beg to say that no difficulty should be experienced in procuring the *Bee Journal* through local booksellers. In those localities where daily papers are supplied, the *Journal* should be delivered on Thursday morning. In the most remote districts, not later than Saturday. In publishing the weekly issue on a fixed day, the difficulties hitherto experienced in obtaining the *Journal* as soon as published, through the local booksellers, will cease. We feel sure our readers will welcome the change.

THE NEW YEAR.

The year 1885, with all its joys and sorrows, has passed away and we are entering upon the new year, 1886—the 14th of the existence of 'Our *Journal*.' This number is the first of the 'weekly' issue which we have decided the *British Bee Journal* should become in deference to the wishes of our subscribers. The *Bee Journal* was called into existence by the necessities of the times and was designed to advocate the cause of bee-keeping. For ten years it appeared once a-month, it has since, for three years, been issued regularly on the 1st and 15th of every month, and now it enters upon a new era of its existence by a weekly issue with the same grand object in view as when it first started. To support its high calling and to make it the leading 'weekly *Bee Journal*' we are determined to use every means within our power. We already number amongst our contributors the most experienced and successful bee-keepers in the country, and we take this opportunity to thank them for their assistance. We are grateful for past favours and we confidently look for an increased support in order to enable the *Bee Journal* to retain its position of being *the best* paper relating to bees and bee-keeping.

There are a great many bee-keepers in Great Britain who never write on bee matters at all although well able to do so, these we invite to answer queries in our columns and join in the correspondence. We wish to make the *Bee Journal* as instructive as possible, and we would remind all that there can be no intelligent practice of bee-keeping unless it is founded on correct theory, and to get correct theory requires comparison and interchange of views with the most successful workers.

We invite the co-operation of all our friends to make the present volume of the *British Bee Journal* even more interesting than any of its predecessors. We wish all to take an interest in, and to make it, 'Our *Journal*.' Let us all do our work together, faithfully and well, always with reference to the ever-advancing principles of progressive thought and action.

Hoping that 1886 may be especially marked as one of progress and advance in bee-keeping, and that the honey season may be as good as the last. We wish our readers—

A Happy New Year.

A RETROSPECT.

Before we enter upon the duties and anxieties of another year, it may, perhaps, be desirable to cast a retrospective glance on that through which we have just passed. Several events during its passage have transpired which will leave their impress on bee-keepers and the progress of bee-keeping for many years to come.

The first of these occurrences which strikes the memory is the death of the Rev. H. R. Peel. The feeling of gloom caused by that event has not yet passed away. His loss was indeed great, whether we regard him as the editor of the *Bee Journal*, or as the active and pervading spirit of the British Bee-keepers' Association. In the one we miss his guiding mind and his wise counsel; in the other, we have lost a presence and an influence which left its effect not only on the Parent Association, but on all those affiliated with it. His untiring energy, his indomitable perseverance, his skilful powers of organization, his lavish expenditure of time, trouble, and means, had a marked result in creating an enthusiasm through the length and breadth of the land for the industry of bee-keeping, which will remain for many years to come. We trust that the spirit infused by him will continue to animate the secretaries of the County Associations, so that the benefit caused by his self-denying efforts may be continued and increased; so will they show their loyalty and respect for him who so laboriously and successfully worked for the best interests of bee-

keepers. At his decease the British Bee-keepers' Association invited bee-keepers and others to subscribe to a fund to perpetuate the memory of Mr. Peel, with the hope that the investment of the amount collected might be devoted to a prize to be given to cottagers in connexion with the advancement of bee-keeping. The Committee of the British Bee-keepers' Association have recently issued a circular announcing that this fund should be closed at the end of the year 1885. We have reason to believe that the sum collected has amounted to 100*l*.

Another event which will mark this year has been the establishment of Honey Companies. Mr. Peel took a great interest in the formation of the British Honey Company, and was elected the first chairman, and presided at the first public meeting, which was held on the 15th of April, 1885. The primary object of this Company was to promote bee-keeping by the ready sale of British honey, to assist small producers to dispose of their stock, and to check and to diminish the sale of the foreign honey, which has been imported into this country in such great abundance. The Company had many difficulties to contend against in the beginning of their career, chiefly through the misapprehension of bee-keepers as to their intentions. The financial year of the Company closed on the 31st of December, and we may soon be furnished with an authorised statement of the work achieved during the past year. We believe it will be found that, though they had taken full powers to sell foreign honey as well as home produce, the supply of British honey has been so abundant that these have not been brought into exercise. The number of shareholders may be reckoned about four hundred, thus indicating the great interest taken in it by bee-keepers. The desire for pure British honey is increasing, the virtues of honey and medicine are being recognised, there is a wide and an open field for the energies of the Company, and we trust that they will go forward and possess it.

The principal Exhibition in connexion with the British Association during the year was held at Preston under the auspices of the Royal Agricultural Society. This was eminently successful, as during the whole time the Exhibition was opened the bee department was thronged with an eager multitude of visitors desirous of embracing the opportunity offered of receiving instruction in the science of apiculture. The future of bee-keeping lies in the recognition of the closeness of relationship between Agriculture and Apiculture. These are becoming more mutually helpful to each other; and we are glad to note that this example of the Royal Agricultural has been followed by the Lincolnshire, the Hertfordshire, the Glamorganshire, the Isle of Man, and others. The next meeting of the Royal Agricultural will be held at Norwich, when we trust that the British will again come to the front and educe the great truth that bee-keeping is veritably a part of agriculture, and that it will realise to the farmer a larger amount of profit than any other of the minor industries connected with his work.

The British Bee-keepers' Association is making safe progress. The number of members is maintained. New Associations have sprung up in Glamorganshire and Montgomeryshire, and steps are being taken for opening up North Wales.

We must not omit from our review of the year the valuable contribution to bee-literature produced by F. Cheshire, Esq. This work has absorbed his mind for many years; he has literally followed the Horatian maxim, *nonumque prematur in annum;* and from the extreme pains and careful study of the physiology and anatomy of the honey-bee, and the delicately delineated wood engravings, we believe that no more valuable contribution to a knowledge of the honey-bee has been brought before the public since the time of Huber. The work, from being published in monthly parts, and therefore frequently breaking off abruptly, precludes it from being studied so closely or so sequentially as it can be when completed. The portion of the work now passing through the press is eminently scientific. This will make a volume consisting of 360 pages. It will be followed by Practical Apiculture, which will extend to an equal length.

We have also heard that the work on bees that has occupied for some time past the time and attention of the Rev. F. C. Jenyns, of Stevenage, Herts, will speedily make its appearance. The object of this work is not to assume the place of the Guides which are now before the public, or to be considered in the light of a scientific treatise, but principally to impress the importance of the habits of observation on the rising generation, and to unfold to them one page of the book of Nature by portraying to them the wonders of bee-life, with the hope that it may create such an interest in the subject that it may lead them in after-life to desire to know more, and to take up bee-keeping for themselves with that knowledge which will add to its interest, and will enable them to make it more profitable. The work is illustrated with many engravings, and contains an introduction written by the Baroness Burdett-Coutts.

We have not yet received the complete statistics of the imports of honey into this country, but for the first eleven months of the year 1885 they amount to 58,022*l*., as against for the same period in 1884, 59,628*l*. The value of wax imported in 1884 was 105,813*l*., as against 97,142*l*. for 1883. When the statistics of honey and wax are fully before us we will take the opportunity of dealing analytically with them. There can be no doubt of the continued large importations of honey, and the only mode of checkmating them is, that the home production must be able to compete in quality and price with foreign honey. We cannot conceal from ourselves that apiculture, as other industries, is passing through a revolution. The sooner bee-keepers recognise this fact the better, and endeavour by more skilful management and by the employment of better appliances, to increase the produce of their apiaries. Small profits and large sales must in the future be relied on, and small sales and large profits be relegated to the past. We believe that Honey Companies

will prove a great factor in the solution of this commercial problem, and the future will indicate to what extent, and by whom, bee-keeping can be rendered profitable.

From all parts of the United Kingdom our reports lead us to the conclusion that the honey harvest for the past year has been an abundant one—with the exception of the heather honey, which has been a failure.

We here close our cogitations with the expression of the hope that bee-keepers and bee-keeping may flourish during the year on which we have entered.

USEFUL HINTS.

After severe frost and snowstorms, again we have a sudden thaw, and the temperature so mild that to-day—the last day in the old year—bees are gaily disporting themselves, and with open weather strong colonies will soon commence breeding in earnest. Then consumption of stores will increase daily, and it behoves the careful bee-keeper to keep a sharp eye over his hives to see that all have sufficient food. Hives well stored in the autumn will be in no want at present, but where feeding is a matter of necessity to prevent starvation, the 'Heddon Syrup' as recommended in our last, may be used.

Food.—A kind of food much used in America is 'Good's Candy,' which is made by mixing together liquid honey and very finely powdered loaf-sugar, until the consistency of dough, or stiff putty, is reached. The paste is then laid on the frames over the cluster, in the form of a cake, and covered with the quilt. In skeps it is pushed in at the feed-hole. Bees take it readily, and there is little or no disturbance caused to the colonies. But if preferred, barley-sugar may be given in a similar manner, or placed under a bell-glass or tumbler, over the central hole. Or sticks of it may be pushed down between the combs near to the cluster. For these operations, advantage should be taken of any fine day which may occur, and the bees should be disturbed as little as possible. These little attentions will tend to keep the bees in perfect health.

As regards Quilts and Floor-boards, we reiterate our former advice, occasionally to change both, giving them dry and warm. Floor-boards, when well scraped, should be sponged with carbolic solution and dried.

Dysentery.—If any hives are found to be foul from dysenteric discharges, transfer combs and bees to dry clean hives. In suitable weather this may be quickly performed in the open air, otherwise it is best done indoors. The filthy ends of frames should be scraped and brushed over with weak carbolic solution, the bees confined to few frames, and fed with 'Good's food.' Any unnecessary manipulation by causing excitement leads to consumption of food, and increases the evil.

Enemies.—Refer back for advice respecting Snow, Insectivorous Birds, Clearing Entrances, &c.

Preparations.—Again we remind all to prepare hives, supers, sections, foundation, feeders, &c., against the busy time coming. Soon will the snowdrop, first harbinger of spring, appear,—and next the crocus,—arousing the bees to life and energy, and the queens to breeding. It will be found of great advantage to have all appliances in readiness, that time may be afforded for spring-feeding, manipulations, &c.

Upward Ventilation, although advised by all modern apiarists of any note, appears to be in direct opposition to the ideas (instinct?) of the bee, since the free use of propolis entirely prevents it. In order to indulge this propensity, we are wintering a score of colonies, in frame-hives, covered with closely fitting enamel-cloths, propolised, as in the summer months,—although the bees use very little propolis on this material. Turning aside these coverings on a fine day last month (December 14th) we found all the colonies perfectly healthy, the hives free from dampness or mould, and the enamel bedewed with a little moisture above the clusters *only*. The summer entrances were left open to their full width, and, according to present appearances, the bees are wintering, at least, as well as those which are covered with felt, carpet, and cushions.

In future 'Hints' we hope to record the final result. The winter, so far, has been such as to afford a fair trial, the bees having been unable to fly for periods of several weeks at a time; and we are, at present, favourably impressed with the plan. On placing the hand upon the enamel-cloth, the exact position of the cluster may be at once discovered by the warmth at that particular spot. The enamel is covered by felt, carpet, and flat straw-cover, and each hive stands in an outer shell, protected by a waterproof roof.

A happy and prosperous New Year to all our readers, and may we all obtain more honey and better prices than during the year which has flown.

SAMUEL BAGSTER,

INVENTOR OF THE 'LADIES' SAFETY HIVE.'

More than half a century has passed away since Mr. Samuel Bagster, 'practical typographer and devoted apiarian,' as he delighted to call himself, made a not unsuccessful effort to minimise the objections to bee-keeping, and to render its pursuit a pleasant occupation for ladies. 'Having,' he says, 'the happiness of dividing the joys and sorrows of life with one in whom, in the words of Solomon, "the heart of her husband doth safely trust," for "she looketh well to the ways of her household, and eateth not the bread of idleness," I felt it my pleasure to save her as much annoyance as possible while pursuing her daily avocations. Bees claimed a great share of my individual attention; but the constant fear of being stung, or not managing the bees correctly, so strongly influenced my partner that she confessed her fear, and begged to decline the duty; unless something could be done to find bees without stings, or hives that could be so worked as to take away fear in management.' As a mark of our respect for the kind intention and gallant attempt to produce the hive required shown by a by-gone bee-keeper, we consider it a duty incumbent upon us to give in this, the first number of our new series, a short memoir of his life.

Samuel Bagster was the eldest son of Samuel Bagster, the founder of the publishing firm of Bagster and Sons

(now S. Bagster and Sons, Limited, 15 Paternoster Row), enjoying even to the present day a world-wide fame for the beauty and excellency of their Polyglot Bibles. Bagster the elder was born in the year 1772, and died at his residence in Old Windsor on the 28th March, 1851, aged seventy-eight. He was a frequent attendant at Salters' Hall Chapel in the City of London. He married on the 19th of March, 1797, Miss Eunice Birch, who survived her husband twenty-six years, attaining the venerable age of one hundred. The village of Old Windsor had intended to celebrate this attainment by Mrs. Bagster of her hundredth year by holding a fête in her honour. Her Majesty Queen Victoria, hearing of this intended demonstration, called upon her neighbour about a fortnight before the expected day, and sat chatting with her for some time. Mrs. Bagster was greatly excited by this visit, and by the approaching festivities. She became, from that time, restless and sleepless, and gradually weakened, and on the very morning of her hundredth birthday she peacefully passed away.

Samuel Bagster, jun., was born on the 19th October, 1800, and, after having been educated at a school in Oxford, conducted by the Rev. J. Hinton, was articled to his father in the year 1815. From his earliest youth, works on natural history were his chief reading. During his school vacations, and during his apprenticeship, it was his greatest delight to visit the rooms of the old menagerie in Exeter Change to learn the peculiarities of the various beasts there confined. Every opportunity to witness collections of living specimens was embraced with eager avidity, and a taste for the study of animated nature permeated his mind. As time passed on, he gradually concentrated his attention on one object, and he found himself most interested in the study of bees.

From an early age Bagster showed a serious tendency, and in October 1822 he joined the Baptist church in Blackfriars. Having acquired the necessary technical training in his father's establishment young Bagster commenced business for himself in Bartholomew Close. In June 1825 he married Miss Elizabeth Hunt, of Heathrow, near Harlington, Middlesex. He lived for some years in Bartholomew's Close, but towards the latter years of his life he took up his residence in Shepherd's Bush. He called his cottage after the old Italian printers, 'Aldine' Cottage. The village of Shepherd's Bush, at that time, was principally surrounded by cow-pastures, 'which are cut very early for hay, that the cows might get the earliest advantage of the grass, and the season for collecting honey was very short.' It was here that he devoted what time he could spare to poultry-breeding and bee-keeping. In his preface to his work on *The Management of Bees*, he says, 'I follow the profession of a printer; and while my earliest and latest hours have been spent with my bees, or for them, my days are devoted to the use of the public, and to the acquisition of an honourable income.'

It was during the summer of 1834 that he brought out his work on *The Management of Bees*, printed by himself, and published jointly by his father and Wm. Pickering. This book has passed through three editions. It contains much valuable and practical information, and contains a useful history of bee-keeping up to his time. In this work we find a minute account of his Ladies' Safety Hive, in which he considers the following desiderata in bee-management may be embraced,—'cool store-room, prevention of swarming, easy method of taking honey, promotion of swarming when wished, perfect inspection of the whole hive, protection from wet in the open air, and a method of feeding in the severest weather without exposure to cold.' In it are found full directions for the manufacture of this hive, which it would be impossible to render intelligible without giving the diagrams which accompany it. We add, however, in his own words, the result of his system:—

'The deprivation may be performed at any time, when the boxes are full. If it be determined to take honey on any particular day, an arduous duty in most hives, little or no care is required in this. The day before you intend to have a share in the honey, with a stiff wire close the slide of your honey box: this manœuvre will make many bees captives, and cut off their retreat to the queen, and of course they cannot get out through the closed door. What is to be done in such a case? Use the wonderful instinct of the bees to effect your purpose; open the little outward door of the room about one hour *before* dusk, and all your prisoners will rush round to the front of the hive to the queen, with an alacrity that is amazing. *After* dusk, close the outward door again, and you may take your friends to your hive on the following day, to see you deprive it of its honey without any fear of molestation. When you have taken out the combs, shut the door, and withdraw the slide for the bees to clean out the room: if they have space enough without it, cut them off again after cleaning, or leave them to themselves. Judgment is necessary.'

The hive, which may be considered to have been a great improvement on those which preceded it, has had its day, and we may now inscribe on it the word *Fuit*.

Samuel Purchas, the son of the author of the *Pilgrimes*, issued in 1657, a quaint quarto, now extremely rare, styled, 'A Theatre of Political Flying Insects,' in two parts, the first being devoted to the history and management of bees, and the second to meditations and observations, theological and moral, upon the subject. The greater part of these reflections were reprinted by Bagster in a volume produced in the same style and at the same time as his own practical handbook. He contributed *The Treasury of Scripture Knowledge* to his father's Polyglot series, and projected a series of questions on the Gospels for Sunday-school children; but the manuscript of the latter remained unfinished and unpublished.

Although at first the progress of his business gave him cause for anxiety, it steadily increased in extent. Many of the Polyglot Bibles, and other learned publications of Messrs. Bagster & Sons, came from his press.

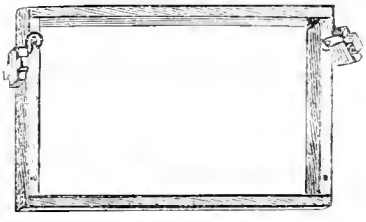
Mr. Bagster took a warm interest and an active part in the anti-slavery and temperance movements; and for this latter cause he wrote several pamphlets. He is described by an esteemed correspondent as being 'a pleasant, genial man, a general favourite, very intelligent, and very enthusiastic about bees.'

Mr. Bagster died at his residence in Shepherd's Bush on the 1st July, 1835, aged thirty-five years, leaving a widow and no family. His widow has been since twice married, and died in the year 1879. He was buried at Tottenham Court Chapel, and his remains were removed in 1843 to the family vault in Abney Park Cemetery. The last time we were in that cemetery we were attracted by the massive highly-polished granite slab which covers the vault. On it was deeply engraved in Greek characters the motto that appears on the title-pages of the Latin, Greek, and Hebrew Polyglot Bibles, Πολλαι μεν θνητοις γλωτται, μια ἀθανατοισιν,—('There are many languages for mortals, one for immortals.') The correspondent above referred to remarks: 'The granite slab on the father's grave was somewhat remarkable, because on it was engraved the date of birth of his wife some twenty years before her death. The incompleteness of the inscription looked incongruous, "Born August 1777" —— and no more.' Mr. Bagster's business was sold at his death to Mr. J. Rider, and it is still carried on in Bartholomew's Close under the name of William Rider and Sons.

As an author Mr. Bagster showed marked diligence when we consider the absorbing nature of his business and other avocations. His works consist of,—1. *The Treasury of Scripture Knowledge*, consisting of a rich and copious assemblage of more than 500,000 Scrip-

ture reference, and parallel passages from Canne, Brown, Blayney, Scott, and others, with numerous illustrative notes; adapted to be the companion of every biblical reader. London: S. Bagster, 1834. Foolscap 8vo. and 4to., forming the second part of the *Treasury Bible*. 2. *The Management of Bees*, with a description of the 'Ladies' Safety-hive,' with forty illustrative wood-engravings. London: S. Bagster, 1834. Small 4to. A second edition was published in 1838 by Saunders and Otley, Conduit Street; and a third (unaltered) in 1865 by Griffith & Farran. 3. *Spiritual Honey from Natural Hives;* or, Meditations and observations on the Natural History and Habits of Bees, first introduced into public notice in 1657 by S. Purchas, M.A. London: S. Bagster, 1834. Small 8vo."

REVERSIBLE FRAMES.



The above wood engraving represents a reversible frame invented by Mr. Webster of Wokingham. It is very clever and ingenious. By these ends a perfectly reversible frame is obtained without any diminution in its size. They will fit any description of frames, either plain or broad-shouldered. By cutting over the two binders they could be used with metal ends. Where used with broad-shoulders the two pivot levers form distance blocks at each end of hive. Mr. Webster says that he has tested them as to strength by hanging a 28 lb. weight on the frames. Our fear would be that when holding the frame with one hand while manipulating, the ends might slip off into the midst of the bees.

We have also received from Mr. John Rudge of Dursley a rough model of a reversible frame. It is very simple. A small piece of tin revolving round a screw, forms the end of the frame. When on the downward side, it can be turned out of sight. It evidently can be cheaply made, and easily managed. A flange on the side keeps the frame from the side of the hive. It looks weak, but Mr Rudge assures us that it will carry a weight of 20 lbs.; and that he has fifty hives on reversible frames.

Selected Queries.

[1.]—*Is it practicable to produce comb honey in marketable shape without the use of separators?*

Yes, it is to a certain extent practicable, by using narrower than the ordinary two-inch sections, by greater care, and by more frequent manipulation than when separators are used. I do not hesitate to say that more honey is gathered when separators are not used, but if we get the extra quantity at the sacrifice of hive, and have a quantity of ill-shaped sections, which I think cannot be avoided, the advantage of dispensing with separators is doubtful.—C. N. White.

Yes; with sections not more than 1¾ inch through.—Samuel Simmins.

No; I have tried the 1½ inch sections without separators and cannot get the combs built out with sufficient regularity to satisfy me.

Sections are the most marketable form in which comb-honey can be produced. Without the use of separators, or where they are too narrow, the honey-comb is generally bulged in such a manner that sections cannot be glazed without damage. The glazing of sections (to protect the contents from damage in handling, attacks of robber bees, and from dirt and dust) has now become a necessity. Sections thus protected command a higher price and a ready sale, whilst those unglazed are difficult to dispose of in the shops at any price.—John M. Hooker.

It is *practicable*, but not *desirable*, since the sections so produced are less evenly worked, not so well filled, and are of less value in the market. If the plan is tried the thickness of the section-box should be reduced from two inches to 1½ inch. American apiarists have adopted the plan to a considerable extent.—George Raynor.

[2.]—*Is it advisable to clip the queen's wings? What has been the experience with such queens?*

My opinion has been against the practice, and I have never had a queen with clipped wings.—F. Lyon.

I have had no experience in this.—J. Lingen Seager.

Le jeu ne vaut pas le chandelle. To secure a temporary advantage the seed is sown for a crop of annoyances in the future. Queens with clipped wings generally disappear at a time when there are no means of supplying their loss. Queens leave and return to their hives oftener than most people imagine.—P. H. Phillips.

It is *not* advisable to mutilate the queen by cutting her wings, if the apiary can be attended to. The only time it should ever be done is when the apiary is left without anybody to attend to it, as it then prevents the loss of the swarm, as the bees all return to the hive again. —William Carr.

I should say where the queen is valuable, and apiary could not be visited each evening, no advantage is gained, for queen would most probably die during the night if swarming is attempted, as she would be most likely to fall to the ground. If queen is of no particular value, the swarm of course returning to the hive in such a case is delayed some days, but would then be more likely to abscond, being headed by a young unfertile queen. Of course where apiary is near at hand, and can often be overlooked, there is some advantage, as fallen queens may be picked up and returned or united to an artificial swarm. Have had no personal experience.—C. Brown.

I think not; because there is always a great risk of injuring the queen, even in the hands of the more experienced, and because the principal objects of clipping —viz., to prevent a swarm escaping, and to ascertain any exchange of queens—can be attained in other more natural ways. There are, perhaps, cases where clipping may be advisable, but I should certainly not recommend it as a general practice. Whether clipping, if done properly, has any bad effect upon the queens, I should not like to say, as my experience is too limited.—F. Zehetmayr.

[3.]—*What is the best plan for ripening honey?*

Always keep honey in a warm room, and if it is not ripened, put it in open barrels, or cans covered with a piece of strainer. It can be rapidly ripened by heating it to 200° Fahr., as the excess of water is evaporated.—Geo. Walker.

No honey should be extracted until the combs are three-fourths sealed over. When separated from combs, first strain, and then, in a dry room, store in large earthenware crocks, or galvanised cylinders, for better convenience, with treacle valve to draw off as needed, such storing receptacles to be tied over securely with sheet of calico. If left until granulated, place strong

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* We are indebted for much of the above information to the *Dictionary of National Biography*, edited by Leslie Stephens, and to communications from J. W. Pewtress, Esq., Godalming.

paraffine stove under until the honey will run freely into smaller vessels, where it will soon re-set into a body of far more even consistency than is generally presented when bottled or canned straight from the extractor.—SAML. SIMMINS.

Leaving it in the hive until the bees have sealed it.—GEORGE RAYNOR.

The excess of water in unripe honey can be evaporated by applying a constant temperature of 95° (Cent.). The duration of heat applied will depend upon the quantity of honey subjected to evaporation. Two gallons require twenty minutes simmer after the above temperature is reached, larger quantities need a proportionate longer time.—HENRY DORBIE.

Put the unripe honey in a jar or tin and place the same, resting on two pieces of wood, in a larger vessel. Fill the outer vessel with water and let it simmer until the excess moisture of the honey is evaporated. There is Mr. Cowan's honey ripener, a capital apparatus no doubt, but having the disadvantage of being too expensive for the average bee-keeper. The best plan to get ripe honey is to extract from the combs just when the bees are beginning to cover over the cells. There is, then, no need for ripening by any artificial means.—F. ZEHETMAYR.

The best plan is not to extract the honey from the comb until it has been sealed over. I do not believe in the artificial ripening of honey. 'In extracting green or unripe honey it is impossible, by human art or skill, to impart that exquisitely fine finished flavour that the bees give it when left with them until it is capped.' The Rev. L. L. Langstroth said, 'He believed there were many things that bees could do, certain things better than we can, and ripening honey was one of them. There was too much artificial work in bee-keeping.'

If a sufficient number of frames are used in hives on the 'doubling' or 'storyfying' plan there will be no difficulty in allowing the combs to remain until the honey is sealed over before extracting it. On the other hand, if a hive containing nine or ten frames is used without any second storey, the outside frames must be always emptied as soon as they are full without waiting for them to be capped, or the bees will have nowhere to store honey whilst that already stored is ripening and being sealed over. Honey of this kind is best put into some deep tank or vessel in large quantities and allowed to remain for about a week. The thin and inferior honey will rise to the top, and the good ripe honey will go to the bottom. This thin honey, which will generally be a small percentage, can be made thicker by evaporation: but it will lose all the peculiar taste and aroma that honey should have, and be little better than sugar-syrup.—JOHN M. HOOKER.

LECTURE ON BEES AND BEE-KEEPING.—Mr. Badcock, of Southfleet, Kent, gave a lecture on 'Bees and Bee-keeping,' in the schoolroom on December 16th. The lecture was illustrated by the Association's diagrams and had for its object the prevention of the wholesale destruction of bees which goes on in the neighbourhood, and the showing the advantages of the modern system of bee-keeping. The lecturer described the wonderful structure of the bee and showed how beautifully it is adapted to the creature's wants. The relation of bees to flowers was next noticed, and the indebtedness of fruit-growers to bees was pointed out. The moveable comb system was described and the advantages pointed out, the way of quieting and handling frames being shown, as well as the plan of supering with sections. The lecture was much appreciated by a small, though attentive audience, which included a few bee-keepers. The lecturer concluded by offering to help, free of charge, any bee-keeper in the parish in any way he was able during the next season.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* MR. J. HECKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

[1.]—The value of honey imported into the United Kingdom during the month of November, 1885, amounted to 1185*l*. [From a private return sent by the Principal, Statistical Office, H.M. Customs, to E. H. Bellairs, Wingfield, Christchurch.]

BRITISH BEE JOURNAL.

[2.]—On the 7th instant, Mr. Editor, we are, then, to have the pleasure of welcoming the first weekly issue of the *British Bee Journal*. I feel grateful to know this, and doubtless hundreds of your subscribers will be also, for it has been a long-felt want; and I venture to think no one has better knowledge of this fact than our late lamented editor and yourself: hence, I presume, arose your desire to carry out what he had himself intended, and so meet the craving of thirsty bee-keepers.

Many years have passed since the *B. B. J.* was first found amongst our monthly periodicals, and great indeed have been its strides onwards, giving new life to an industry so desirable, but which had well-nigh sunk into oblivion. Its birth and cradling (the most trying time) must ever be remembered with gratitude by all interested in bee-keeping, as given by that able and valued guide, Mr. C. N. Abbott, who, endued with such great practical knowledge of bee-keeping, and the power of imparting it to others, after ceaseless labour accomplished his determination to place before the British public a Journal worthy of the name.

Though changes have since taken place as regards its owners and editors, the onward course the *Journal* is still making cannot fail to give pleasure to him by whose brains so valuable a work was first brought to light. I observe with much regret the *Journal* has not of late been adorned with writings bearing the well-known initials, 'C. N. A.;' his pen appears to have gone rusty. What delight it would give to read in the pages of the first weekly issue more of his parental and sound teaching, though in the way of a *poser* it *would be interesting*. Others, too, whose writings in earlier numbers gave so much valuable matter one would wish to see again to the fore with increased vigour. Can it be that love for the work has grown cold with them? Surely not! At no time more than the present do we need the help and guidance of the *sage practical observer*, half swamped as we are by propounded *theories*, bewildering to the whole creation of bee-keepers. I hope the new management of a weekly issue of the *Journal* (entailing as it will necessarily so much additional labour to yourself and your staff) will prove satisfactory, and secure increased support, and so aid in extending its sphere of usefulness.

Good health and good luck to you, Mr. Editor, Mr. Sub., and the whole community of bee-keepers.—R. R. GODFREY, *Grantham, Jan. 4th.*

P.S.—I don't wish to appear greedy, but please give us more of 'Useful Hints.'

GREAT SLAUGHTER OF QUEEN WASPS.

[3.]—Being very much annoyed by wasps in my apiary during the past summer, I determined to kill as many queen wasps as possible before next, and asked my bee-keeping friends, to, as Shakspeare puts it, 'take heed, have open eyes,' for the same object: one of them did indeed do so.

A few weeks ago I found thirteen queen wasps in the stump of an old willow-tree near Dadlington (three miles from here), and some friends living there destroyed eight or nine more a few days afterwards. W. Turner, of this town, also found twenty-nine beneath the felting on the top of a hive, and yesterday Wm. Ayre, Elmsthorpe, an old bee-keeper (and a good one too), brought me 125 more of these yellow-jackets. They were found underneath the tiles of an old barn which is undergoing repairs, and my friend tells me that he lost quite as many as he brought, for a lot fell among the debris. I send the 125 queens by same post as this for you to see.

In conclusion I beg to wish you and all bee-keepers a happy and prosperous New Year, and to ask you to kindly hint to the brotherhood the necessity of keeping down these troublesome pests.—WALTER S. PRIDMORE, *Second Class Expert, Hinckley, December* 29, 1885.

[We received safely the consignment of queen-wasps. Their arrival created quite a sensation in our establishment. Having gratified the desire of those who wished to possess specimens, the remainder were taken to Mr. Cheshire to assist him in his vespal studies.—ED.]

BLIGH COMPETITION.

[4.]—The point in Mr. Owen's diary on which I animadverted in my last was the improbability of the large swarm of 4½ lbs. coming from his No. 1 hive after the treatment that hive had received at the hands of Mr. Owen (*vide* his diary in *B. B. Journal*). I do not insist that it did not issue from No. 1. Mr. Eyles must admit, if he is a *bee-master* like Mr. Owen, that it is a very remarkable occurrence for the young queen to leave the hive after she had began breeding, and likewise leave the hive queenless: there could not, by any possibility, have been another queen in the cells arrived at the age to pipe to the queen that came forth with the swarm on the 23rd. Mr. Owen's diary, as published at page 333, last vol., says, 'This swarm came out at 10.30 a.m., and remained clustered on a pole till 7.30 p.m., *before I found it*.' Here is a swarm of bees up a pole for nine hours. Now, as I have only the published portion of Mr. Owen's diary to guide me in my deductions, may I ask, Did any one see a swarm issue from No. 1 in the morning of June 23rd at half-past ten? and, if so, Was there anything to identify the swarm found at half-past seven in the evening as the swarm that issued from No. 1 in the morning? Mr. O. says, '*before I found it*.' Was the hunt proceeding all those nine hours? and was it only by chance they were spotted in the cool of the evening? or was a swarm seen to come out of No. 1 and decamp no one knows where, but not finding a resting-place returned like the dove on a memorable occasion to the home from which it issued forth?

This, Mr. Eyles, is where my doubts crop up, taking the gross improbabilities of a swarm coming from No. 1 hive at all, and, allowing that it did occur, this losing and finding the swarm after a search of nine hours. I, as a practical bee-keeper (not a *bee-master*, like Mr. Owen), I don't aspire to that, but simply as a bee-keeper of some twenty-five to thirty years' experience, have never had a similar case, or anything approaching it. Now, I think Mr. Eyles will agree with me that in a public competition, or more properly defining the matter, I say in a 'National Competition,' everything should be perfectly straightforward and above suspicion; there should be no bopholes through which a doubt can creep in.

Mr. Eyles implies in his letter in last issue that I would impeach the judges. Allow me, sir, to inform Mr. E. that I have as great respect for the three gentlemen who acted as judges in the 'Bligh Competition' as one man can have for another, either as regards their integrity, impartiality, and justice. I would add more, but do not wish to appear sycophantic.

Mr. E. must not forget that judges are human, and liable to mistkes. I don't say they made any mistake in this matter; but I consider I had a right to point out what I considered was doubtful, and also the mistakes in Mr. O.'s diary, viz., the discrepancy of 10 lbs. of honey between his diary and balance sheet and the tabulated form, also that my produce of honey is stated in tabulated form as 44 lbs. more than Mr. T. O.'s, and as per diary it amounts to 54 lbs. more than his.

And then, in closing, Mr. E. accuses me of keeping back part of the truth *re* the valuation, and says I did it carefully. I say the valuation was not my valuation, that I commented on the published facts as they appeared in the *B. B. Journal*, and if the valuation was excessive it was as per rules, and, I may add for Mr. Eyles' satisfaction, included two twenty-one crates, and one fourteen-section crate, also section-frame with excluder zinc, extra frames of comb, &c.: and that the brood-frames had not been disturbed in my hive from June 24th till the hon. sec. of the Berks Association came to value hive August 30th. The four frames I extracted the 16 lbs. from were the four frames at back of hive: and when I took them out, on August 19th, I did not remove the quilt farther than was required to lift them out: the empty frames, after extracting, were not even returned to excite the bees; they were left in a perfectly normal condition. I did not take advantage of the rules to extract all the honey from the hive, and then feed up, filling the hive with brood and stored syrup, to enhance the value of the hive at the end of competition.
W. WOODLEY, *Wordl's End, Newbury*.

RIPENESS OF HONEY.

[5.]—I am under a further obligation to you for the trouble you have taken to write the long Editorial note in reply to my last communication on the above-mentioned subject. I have only means of approximating to the facts of the case in regard to spec. gravity, and, from what you state, I cannot do other than admit at once the apparent reasonableness of your standard. Very well: then I am thrown back on the alternative position that some bees have been storing honey which was not ripe, or that they did not ripen it before they had done with it. Now I am not quite prepared to assume that bees do not know their own business, and therefore I should prefer to have it that specific gravity should not be the equivalent for ripeness, if by ripeness is meant marketability. If it be otherwise, we shall find again, as I repeat I have already known, good crystallised, delicious, bonâ fide honey, pronounced, by authority, to be unmarketable, because of its being, technically, not ripe. This affects trade—public trade that is, though private purchasers are abundantly satisfied; and when bees greatly increase, and your fancy becomes a fact, and I cannot continue giving away, and must try to 'make it pay,' and have more than private hands can take, why then the matter becomes serious,—serious for the bee-keeper and thus serious for British trade prospects if many such cases occur, notwithstanding your buoyant encouragement.

I have spoken of 'bonâ fide' honey, and this in reference to your definition of honey, which I entirely accept, even, if required, taking the word 'stored' to mean bottled, corked, and 'sealed.' To what I have in my mind your remarks as to sources of the sham article

do not apply. It could have had no possible connexion with molasses; of honey-dew there is always so little in this treeless district, as I expect you would call it, that it could have contained no greater proportion than our food does of the inevitable dust we eat; while as to the juices of fruits, inquiry and my own knowledge lead me to the conclusion that these had no share in its composition. Our clover (with various summer flowers) held out as long as the season lasted; day after day did the bees career away for their natural supplies; 'to-morrow to fresh fields and pastures new.'

That 'there *may* be pure honey that will not granulate,' does not touch my subject; I have been writing of honey that *did* do so after about two months, and, therefore, was presumably pure and good, though not what is called 'ripe,' and I fear the same thing may occur again until those bees get scales and measures and test-tubes and manage to use them. One word more if I am not too tedious. My 'fear and trembling' was lest every secretary should fly at me for venturing to hint that they had done their work so well that there were now pretty nearly enough bee-keepers in England. I should rejoice if they could prevent 62,000*l.* going out of the country again for honey in one year. Perhaps a few prosecutions might help to this result. For myself, I claim to be as patriotic as most people, but I fear I rather fail to share your beautiful vision of the 'Greater Britain.' The ship of trade, like the vessel of the State, requires a competent—which, to a great extent, means a cautious — helmsman, one who will not drive at full speed into unknown waters, and wreck the craft instead of making her way.

It is still, perhaps, true of most of us that 'hope springs eternal in the human breast,' but we know that there is a 'deferred hope' that 'maketh the heart sick,' and if it be deferred too long while the 'incubus' still presses, the heart may become sick unto death, or at any rate hope may yield to despair, and then apiculture and all the other depressed cultures will——But at this season I forbear.—South Cornwall, *Dec.* 24.

[When writing our former Editorial note on this subject, we were in entire ignorance as to 'what our correspondent had in his mind' when he wrote of 'unripe' and 'unmarketable honey.' Whether it arises from the bees, 'unbusiness-like proceedings,' or from some other cause, we are unable to say, but the fact that bees, under certain circumstances, do 'store,' *i.e.*, 'bottle, cork, and seal unripe honey,' is an undoubted fact. We have repeatedly removed sections which have been quickly produced and lightly sealed, in which the honey was so 'unripe' that fermentation shortly ensued, and the same may be said of honey stored in the body of the hive. But our friend writes of honey which 'granulated,' but had been pronounced 'unripe.' Well, although 'granulation' is so far a mark of purity that the glucose, and other adulterated stuff, sold as honey, is devoid of this mark, it does not follow that 'unripe' honey will not granulate. Both honey and syrup, of various degrees of consistency, will granulate, so that we fear, even when science shall have advanced so far as to supply the bees with 'scales, measures, and test-tubes,' there will still exist a difference of opinion as regards the 'ripeness' or 'unripeness' of various samples of honey; and the 'marketability' of any commodity, we opine, will have to be decided in the future, as at present, by the arbitrary decision of purchasers. We are quite in agreement with our friend as to the desirability of keeping the 62,000*l.* in our own pockets, and the urgent necessity for a 'cautious helmsman to guide the vessel of State,' &c., but we cannot despair of the future of our country. 'The darkest hour is nearest to the dawn,' and *nil desperandum* is a very favourite motto of ours.—Ed.]

Erratum.—In the last line but one, 1st col. of page 408, *for* 'that' *read* 'what.'

OBSERVATORY HIVE.

[6.]—My observations with reference to the building of comb point to the bees (at least on foundation) being arranged side by side in a level row at the top. This may account for the uniformity and regularity of the comb. Now as I have to open my hives to see this, I wish to know if there is any description of Observatory hive that will enable me to expose the bees to view *without disturbing them at all.* I find it impossible to open my hives at all without some slight disturbance sufficient to prejudice and confuse the *accurate* observations I am now anxious to make. I have indicated a clue to the *rationale* of comb building, and am anxious to to follow it up if possible.

As for the drone question, I have advanced a step or so, but am trying to find the answers to some two dozen questions, more or less, connected with it. I have not fully proved the correctness of the blanket theory, and doubt if I can do so beyond cavil; but think I have advanced far enough to completely refute the Prince Consort theory, and so to show that drones are not the lazy, useless incumbrance they are said to be.

For the future I intend to let my bees have their own way in proportioning the sexes, as I believe rejecting drones during the summer is false economy.—Student.

[The Unicomb Observatory hive would suit your purpose. This is a hive to hold from three to six frames of comb between glass, only just enough space being left between the combs and inner surface of the glass to allow the bees to pass over them. The glass sides are hinged and open like doors. If the observatory is to stand indoors, the glass should be double, but if intended for out-of-doors, there should be at least three layers of glass with air-space between each, and next to the glass, outer doors lined and padded to keep the bees inside warm enough. In such hives all the work can be watched without disturbing the bees, but they are not suitable for wintering and the bees and frames have to be transferred to ordinary hives in the autumn.—Ed.]

THE VALUE OF ENTHUSIASM.

[7.]—About six months ago, there was an exhibition at Taunton in connexion with the Somerset Agricultural Society. The County Bee-keepers' Association had a tent there, and the Hon. Secretary (Rev. C. G. Anderson) thought the effort a miserable failure; as the expenditure was much more and the income much less than he had anticipated. Very few people visited the bee-tent, but amongst the number was one who had just commenced bee-keeping, and who had an undoubted attack of the bee-fever. He brought his friends, pointed out to them the advantages of the bar-frame hive, showed them how easily Mr. Blow transferred bees from the straw to the wooden domiciles, asked the expert no end of questions, and imparted the knowledge thus gained to others. The result of this gentleman's enthusiasm has been remarkable. In about two months he secured orders for from thirty to forty bar-frame hives from friends and neighbours; and has roused the old-fashioned bee-keepers all round his district. Here, then, is a crumb of comfort for hard-working officers; and may we not be excused for reminding them that their reward will come in due season if they faint not by the way. Probably very few of the new converts have yet joined the Somerset Bee-keepers' Association, but surely the sphere of interest will widen; and the right work is being done if not exactly in our way.

I know a couple of young carpenters in the country who have made eighty splendid bar-frame hives this year—hives that would have done credit to the best firms in the kingdom. I have heard of another, who lives within a few miles of those referred to, who has been employed the best part of the year in making bee-

keeping appliances, thanks to the kindly interest of the rector of his parish, who gave him an order, put a like advertisement in the local paper for him, and recommended the hives to his friends. So the number of bar-framists is evidently increasing rapidly in the west. It remains for the County Association to show them what they would gain by joining such organizations; for they want to know that before they will spend even five shilling in becoming members. Lectures, travelling experts, and local shows, would certainly prove of great service; but in these days of depression of trade, the financial difficulty appears to be hindering the efforts of many local secretaries.—WEST COUNTRYMAN.

[Our correspondent has shown in the above communication what is to be gained from having County Associations. Had no County Association existed there probably would have been no show, no bee tent, no one to have become enthusiastic, and no converts made. Is it not something for the Society to have created this enthusiasm and been the means of rousing an interest in bee-keeping in the county? We hope that the makers of hives and those who have benefitted directly in the county will acknowledge that there is some good in the Association, and subscribe liberally. If every one subscribed to an Association for only what he could gain, no philanthropic society would ever exist. Directly or indirectly, every one is interested in the spread of bee-keeping, and it is pitiable to see County Associations struggling for an existence, and crippled for want of funds, whilst those who can well afford it keep aloof because they do not see what they are to gain by joining the Association.—ED.]

REVERSING COMBS.

[8.]—At the recent Convention of the North American Bee-keepers' Society a paper was read on 'Reversing Combs,' by Mr. James Heddon, one of the most advanced and practical bee-keepers in the United States of America, a report of which will be found in the *American Bee Journal* of the 23rd of December last, from which it will be seen that, after using from 4000 to 6000 reversible brood-frames, and enumerating their advantages, he says, 'I feel positive that I never should again use a frame that would not admit of reversing.'

This is surely more reliable than the theoretical opinions expressed by you and others in the *B. B. J.* throwing 'cold water' on the system; and if you can find space to reproduce this report in your next, I am sure it will be a benefit to your readers, and induce not a few to try for themselves if there are any advantages to be derived from reversing brood-combs, and so giving space in the brood-nest.—JOHN M. HOOKER.

RAYNOR'S DIVISIBLE SECTION RACKS.

[9.]—Will you kindly allow me a little space that I may ask the Rev. Mr. Raynor to withdraw the imputation he has so carelessly cast upon me and my firm in respect of section racks? I am quite aware that he was the first public exhibitor of the set of crates which bear his name at the Kensington Show in 1881, and so far as I have been able, have always given him the credit due in that respect; but when he says, 'The next public appearance of the rack was at the Knightsbridge Show in July 1883 where Messrs. Abbott obtained for it under a different name first prize,' he casts upon us an imputation which is calculated to do us great injury.

Messrs. Abbott did *not* exhibit the section racks in 1883, and it therefore goes without argument that Messrs. Abbott did *not* take the first, or any other prize, for such racks at the Knightsbridge Show.

If Mr. Raynor had referred to his *Bee Journal* for July 15th, 1883, he need not have made us suffer a fortnight's public odium, for he would have found (page 92) in the list of awards, 'Supers, Class 13, for the neatest and best rack containing 1 or 2-lb. sections with separators, prepared for placing on a frame-hive, 1st, Dr. Benthall; 2nd, Dr. Benthall; 3rd, S. J. Baldwin, certificate.'

All that Messrs. Abbott had to do with the racks was the manufacture of them for Dr. Benthall; and instead of being held up to scorn, I think my firm deserves praise for showing that we can turn out for five shillings as good or better sets of racks, than those for which Mr. Raynor had to pay twelve shillings.

Mr. Raynor did not exhibit any racks at the Knightsbridge Show. Dr. Benthall did and took two prizes. Messrs. Abbott made the crates, and continue to make them, and that firm considers that there is no piracy on their part in selling what they make as the 'Abbott Benthall Crate.'—C. N. ABBOTT, *Southall, December 12th*, 1885.

Noticing the paragraph under the above heading in your last, in which Mr. Abbott demurs to my previous statement that—'Messrs. Abbott obtained for it (the section-rack), under a different name, the first prize.' I beg to acknowledge that, on reference to the Knightsbridge catalogue, I find that he is correct. When making the statement, I had not the catalogue beside me for reference, but merely private notes, taken at the show, where the rack was pointed out to me as 'Mr. Abbott's *exhibit*,' which should have been, I imagine, his '*make*:' and knowing that he is advertising it as 'Abbott's Benthall Crate,' I assumed that he had exhibited it under that name. I trust, therefore, that he will acquit me of any intention to charge him with duplicity, and I regret that I made the mistake

Now that the facts of priority of invention and exhibition by myself have been made public, I am perfectly satisfied.—GEORGE RAYNOR, *Dec.* 18.

DRYNESS OF HIVES.

[10.]—All bee-keepers know how essential it is for the interior of a hive to be dry in winter; but, as far as my experience goes, I think it is a matter of great difficulty to obtain this perfect dryness, owing to the faulty construction of the roofs of almost all hives. I have hives made by three of the very best makers, but not one kept the wet out satisfactorily until I covered them with thin sheets of zinc. They were well painted at first, and I painted them myself very thoroughly from time to time; but still in winter the wood became saturated. And I have no doubt that many bee-keepers, if they were to look at their hives now, after the weather we have lately had, would find the same.

Now that manufacturers are busy making hives for another season, let them, by all means, look well to this important, but too much-neglected point—a roof that will really keep out the wet. I do not mean a heavy shower, but the continued damp of a foggy winter.

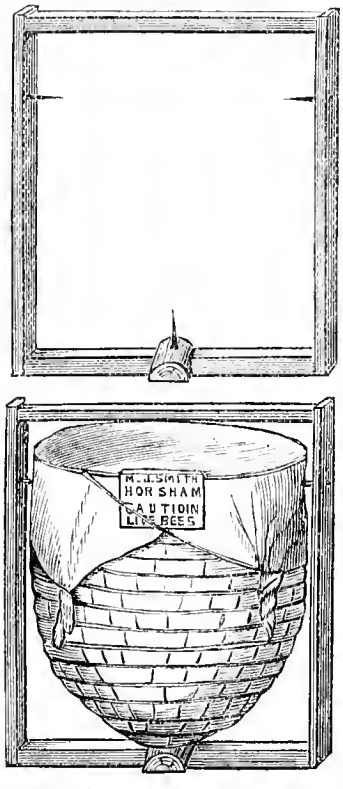
I have tried the zinc now for some years, and, of course, my hives are as 'dry as a bone,' and this, I know, has much helped to strength of colonies in the spring, and thus to good results: for instance, 410 lbs. of super honey from my six zinc-covered hives.

Some little time ago, after a spell of wet weather, I was horrified to find that a new hive with a high-pitched roof, and well painted—made by a manufacturer who gets no end of first prizes at the greatest shows—the only hive I had without zinc, had so let in the wet that the quilts were thoroughly saturated.—F. G. JENYNS, *Knebworth Rectory, Dec. 28.*

[We have used calico and paper felt (both of which adjust themselves to the inequalities of the roof), when well painted to prevent any moisture passing through, and we think them better because they keep hives cooler in summer and are not as heavy as zinc.—ED.]

Reviews.

TIDSKRIFT FOR BISKJÖTSEL, UDVIGET OF DEN NORSKE BIAVLSFORENING. KRISTIANIA.—This is a new bee periodical, the first ten numbers of which we have received. It is published under the auspices of the Norwegian Bee-keepers' Association. The early numbers were edited by two members, J. H. Eger and Aug. Sundby, but the former retired from the editorship in July last, and his place has been taken by Halvard Torgersen. The Journal appears as a monthly, and consists of eight to twelve pages of matter. A great part of it is devoted to the work of the Association, which, we are glad to see, is in a flourishing condition. The Association, we find, was established June 27th, 1884, so that it is a little over a year old. Although so young, it numbered on the 1st of October last as many as 914 members, and is an example to many older established societies in Europe. This large number is probably due to the fact that the subscription is small, being only 2 kroner (about 2*s.* 2*d.*) a-year. For this subscription the member is entitled to the Journal. A member may compound for his future subscriptions by paying 20 kroner (about 1*l.* 1*s.* 8*d.*), which constitutes him a life member. Foreign members are admitted for 3 kroner and 40 kroner respectively. Although, as its organ, the Journal naturally devotes much of its space to the work of the Norwegian Bee-keepers' Society, there is besides very much useful information; and modern methods are described, and the moveable comb-hive advocated. Every month, under the heading 'Erindringsliste,' useful hints are given for the management of bees during the coming month. Useful advice is also given to beginners in bee-keeping by Th. Landmark. In these



articles, amongst other things, instructions are given for packing and sending bees some distance. We were so pleased with the simple appliance used for packing skeps, that we give an illustration of it for the benefit of our British bee-keepers. It consists of two pieces of wood, crossing each other at right angles. To one of these are nailed two upright pieces, and a horizontal one on the top acts as a handle to carry the package. In the cross piece at the bottom is a screw, the part projecting above the wood being filed to a point. Also in the two uprights, at a short distance from the top, are two similar pointed screws. When it is necessary to pack the skep, the combs are secured and the crown placed on the lower point, which, owing to the weight of the hive, is forced into it. The side screws, which are drawn out, can now be screwed in, and their points will enter the straw sides of the skep, and securely fasten it in its place. The illustration shows the plan clearly, and we think this a better one than packing the skeps in boxes, because the railway people are much more likely to be careful in handling the package when they have something to take hold of, and likewise see that it contains live bees.

In the first three numbers of the Journal there is a literal translation of part of the first chapter of Quinby's book, which has not been continued, but has been replaced by a series of articles on the 'Natural History of Bees, and their relation to Plant-Fertilisation.' These articles are illustrated by the British Bee-keepers' Association diagrams, which are reduced for the purpose, each sheet occupying a space of 5½ inches by 4⅓ inches. The engravings are beautifully executed, all the minute details showing most clearly. The articles are very clearly written by Hilmar Young.

The Society, we find, held a most successful exhibition of bees, hives, and honey in Christiania on the 24th of June last and two following days. There were forty exhibitors, one of them, Ivar S. Young, exhibiting no less than 184 articles. Amongst the exhibitors, there were eight from Denmark and four from Sweden, amongst whom we find the name of H. Stålhammer, the editor of the Swedish Bee Journal. The prizes consisted of silver and bronze medals and money. Besides the exhibition of bees in hives, there were also manipulations with live bees, which instructed and astonished the visitors, as these exhibitions usually do. Upwards of one hundred members met for discussion and the subject chosen was, 'The Best Method of Wintering Bees.' This meeting was as successful as the exhibition, and both are likely to give an impetus to bee-keeping in Norway. We wish the Association and its Journal every success.

BUZ; OR THE LIFE AND ADVENTURES OF A HONEY BEE. By Maurice Noel. (Bristol: Arrowsmith. London: Simpkin, Marshall and Co.)—This little book contains the life history of a honey bee, from its cradle to the grave, woven into an interesting form. Its object is to interest children in the habits of bees, and to induce them to study for themselves the wonders of their lives. We hope this object will be attained, and that in many juvenile readers an interest may be awakened, so that as they increase in years a thirst may be created for more practical information on the subject of bees. We can assure our young friends that the work contains a very interesting tale, and proves that the honey bee can live a useful life and die a noble death. The book is well printed and tastefully bound.

THE BUSY BEE.—Few people have any idea of the labour that bees have to expend in the gathering of honey. Here is a calculation which will show how industrious the 'busy' bee really is. Let us suppose the insects confine their attention to clover fields. Each head of clover contains about sixty separate flower-tubes, in each of which is a portion of sugar not exceeding the five-hundredth part of a grain. Therefore, before one grain of sugar can be got, the bee must insert its proboscis in 500 clover tubes. Now, there are 7000 grains in a pound, so that it follows that 3,500,000 clover tubes must be sucked in order to obtain but one pound of honey.

Echoes from the Hives.

Alton.—Bees seem very strong all round about this neighbourhood. December 15th, weather mild, bees flying freely. December 16th, being out on journey, bees were on the wing in every quarter as numerous as they are in spring, generally.—F. G. Ayling.

North Leicestershire—Bees have been in flight, more or less, on the following days, viz:—December 14th, 15th, 16th, 23rd, 26th, and 31st, and on January 2nd. On December 15th they were in flight nearly all day (a very bright calm one), although the temperature never exceeded forty-two degrees in the shade.—E. B.

Slinfold.—The following account shows the quantity and value of honey and wax raised during the past summer (the number of swarms, &c.) by twenty-four bee-keepers (mostly cottagers), residing within a radius of two miles of the Parish Church of Slinfold, to be as follows:—Quantity of honey raised, 2091 lbs., besides 97 lbs. taken from buildings in Slinfold, making a total of 2188 lbs.; and 31 lbs. of bees' wax. The value is given as follows:—2188 lbs. at 10*d.* per lb., 91*l.* 3*s.* 4*d.*; 94 swarms at 10*s.*, 47*l.*; 31 lbs. wax at 1*s.* 6*d.*, 2*l.* 6*s.* 6*d.*: total, 140*l.* 9*s.* 10*d.*—M. Freeman.

Llanerch Dinas Mawddy.—As I was examining my hives the other day (January 2nd) I was afraid that one of them had run short of stores, as they had taken down the cake of candy over the frames, and as I knew that they had very little stores besides, I thought it necessary to introduce a cake of candy over the frames. While doing so I took out the next frame but one to the back dummy, when to my great surprise I found brood in its various stages on both sides; not a small patch, but about half the frame; it is not a strong stock, covering only four frames.—H. P. Jones.

Minorca, December 8th, 1885.—With the exception of a couple of weeks in early November, our weather has been very fine. The fields are now carpeted in green with white and yellow flowers lasting all winter long, from which our bees gather honey and pollen. Great masses of the climber *Vitalba* cover the stone walls with their bell-shaped whitish-yellow flowers, and our industrious little insects are actually storing and capping considerable honey and pollen from them. It is a very interesting spectacle to see them fly away these fine December mornings, working as for dear life. At about half-past ten the reserve forces seem to issue, or it may be they exchange work with those outside, for forthwith an army of regulars pour out uninterruptedly for a quarter of an hour, some of the leaders, or larger bees, seeming to watch them from over the entrance, and joining them from time to time in their foraging expeditions. At two or three in the afternoon, they begin to return in large masses, and a constant stream flies in for an hour. The work of ventilation then succeeds for an hour more. On the 6th inst., I saw the first almond-blossom. By Christmas we shall have an abundance, and the bees will feast on them during January and February. After that, spring comes in, and winter is over. Our farmers are ploughing and planting all the winter months; potatoes are being dug now, fresh ones being planted for Easter. Then the principal crop is planted for the summer. You who have so recently been in Italy can thus realise the difference between our climate and yours. Of course our winter flowers are not very saccharine, but they keep the bees busy.—F. C. Andrew.

[We presume our esteemed correspondent refers to *Clematis Vitalba*, which blooms with us from July to September, and is always covered with bees. Although these collect nectar from the flowers we have never seen them get any pollen with us. Will our correspondent make a further observation, and, if the plant he mentions is *Clematis Vitalba*, tell us if bees are really collecting pollen from it? What a country for bees! You make us wish to go and see the lovely flowers in your favoured island.—Ed.]

Queries and Replies.

[1.] *Prevention of swarming.*—Can you inform me of any *sure* way of preventing swarming? I purchased a swarm last year which twice escaped before it was hived, and being in the centre of the town with no garden it caused a great deal of excitement, and to one gentleman (in whose yard it at last settled) some annoyance; and I am afraid unless I can prevent swarming I shall have to give up what I find a pleasant hobby. I keep the hive on the roof of an outbuilding, and shall make an artificial swarm, give extra room and cut out queen-cells, &c., and I thought of placing either a piece of zinc over the entrance, or an excluder inside during the swarming times, but I am doubtful if this will not prevent the bees *with pollen* from entering. I obtained a few pounds of honey in sections besides, about ten sections of comb only, and through feeding with cake in the autumn the bees cover both sides of ten frames. I shall be very much obliged for any hints in the *Bee Journal* addressed to—J. P.

Reply.—There is no certain method of preventing swarming. Dividing, *i.e.*, making an artificial swarm, as you propose, is the most likely way to prevent it, but we do not advise you to place excluder zinc over the entrance, since it impedes the bees when working, and very often does not prevent the swarm issuing.

[2.] *Feeding with syrup in January.*—Would you kindly tell me through the *B. B. J.* whether it would be safe to feed bees towards the end of January with the syrup described under the head of feeding in the 'Useful Hints' of the *B. B. J.* for 15th December? I think that one or two of my hives have not enough food to last them till the beginning of April, and I would like to give them some food toward the end of January, so as to be on the safe side. I have tried making candy according to Mr. Cowan's receipts, but found that it was either sticky, or if I tried boiling it longer it turned into large crystals and was very brittle. If you could answer me in your next issue you would greatly oblige me.—M. C. H.

Reply.—You must give it warm as directed. Candy is however the least trouble, and if you test it as advised in reply to 'S. J. C.', December 15th, you should have no trouble in making a good sample. The large crystals are sometimes caused by not stirring rapidly enough. The more a solution is agitated the smaller the crystals, and *vice versâ*.

[3.] *Bees near stream.*—(1.) Is there any danger to the bees in placing beehives about eight yards off a small stream? I might say the stream does not overflow?—(2.) *Section crates.*—I am about to buy section crates. Would you recommend me to buy the divisional Raynor rack, or a crate to hold twenty-one sections?—(3.) *Removing Quilt.*—In putting on section crates do you remove the quilt, or only cut a hole through it?—(4.) *Saw Cuts.*—In fitting up new hives should I use frames with a saw-curf down the centre, or Mr. Abbott's frames with their new style of fixing foundation?—Cumbrian.

Reply.—(1.) There will be no danger in placing your bees near a small stream. On the contrary, such a position will be advantageous. (2.) We prefer the divisible section-rack, since (*a*) the parts can be used separately, or as a whole (*b*) it is more easily removed; (*c*) it retains the heat to perfection, and, in our experience, bees commence to work in it more willingly than in any rack we have tried. (3.) Yes, remove the whole quilt. (4.) We prefer frames with a saw-cut, as we find it more easy to insert foundation securely in these than by any other method.

[4.] *Feeding.*—In all the Bee-keepers' Guides, &c., we are told that when the bees are short of honey in the winter they should be fed with candy placed between combs (in a skep). Can you tell me how a beginner can tell when they do want feeding, and also when to place it in hive, as the hive is bound to be lifted up, and I suppose it would be harmful to disturb the bees in such cold as we are having now?—MILSON.

Reply.—Bees in skeps should have received in the autumn sufficient food to carry them through the winter. Skeps must not be turned up during cold weather, but if you have reason to suppose that the bees are perishing from want of food, which may be ascertained by the weight, either feed with barley sugar at the top, or with food made of finely-powdered loaf-sugar mixed with liquid honey to the consistency of dough. This latter food may be pressed down upon the combs through the feeding-hole. Giving food thus will not disturb the bees.

[5.] (1.) *Granulation of Honey.*—It is stated in the *B. B. Journal* of Dec. 15th that 'it would be an easy matter to prevent granulation, or to cause it, in all pure honey.' Will you be good enough to explain how to manage both, in comb honey and also in extracted? (2.) *Solution of Salicylic Acid becoming bitter.*—I had a bottle of salicylic acid solution (Cowan's receipt) which had been kept in the cellar, well corked, for over twelve months; it was so bitter, I never tasted bitterness to equal it. What would be the cause? Would it have injured the bees if I had used it? (3.) *Fumigating with Salicylic Acid.*—Can an ordinary smoker be used for fumigating hives with salicylic acid crystals; if so, how?—BEESWING.

Reply.—(1.) If you read the paragraph preceding that which you quote, commencing, 'The granulation,' &c., you will find your query to some extent answered. Granulation of extracted honey may be hastened by vigorous stirring or beating, and may be retarded by heating to about 190° Fahr. (2.) We have just tasted a similar solution which has been made for upwards of two years, and no change has taken place with it. Are you sure that you used salicylic acid? Crystals of sulphate of quinine, which are intensely bitter, greatly resemble to an inexperienced eye those of salicylic acid, and possibly one may have been accidentally used for the other. This is the only suggestion we can make without seeing the solution. Do not give it to the bees.—(3.) An ordinary smoker would not answer; you require a heated surface on which the acid can be placed to evaporate.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

CHARLES DEAKINS.—Zinc excluder with long holes prevents the queen passing through better than the round-holed. The former is generally used by bee-keepers.

BEE MAN.—The presence of drones in your hive in the month of December indicates either that is queenless or that the queen is too old to perform her duties.

A SUBSCRIBER.—*Bumping.*—See pp. 275 and 276, vol. xii.

THOMAS B.—Novice's Metal Corners may be procured from Messrs. Neighbour, Regent Street.

R. CHAPMAN.—*Sizes of Flat-topped Straw Skeps.*—You will find about sixteen inches in diameter and ten inches deep a fair size. While you are about it, it would be as well if you made the wooden tops in skeps of one inch wide, similar to the top bars of frames. If you want straw caps for sale, you had better use them of a size to cover the whole of the hive, and four or five inches deep, but why not use sections? You can probably get skeps made to your pattern from Mr. I. Gadd, Wokingham, who might also give you the particulars you require respecting cane.

W. G.—1. *Sweet Biscuit for Feeding Bees.*—The sample you send may be good for stimulating in spring, and seems to offer an attractive form of artificial pollen, but is unsuitable for this season. The second sample of bee biscuits is better made than the first, and more likely to be accepted by the bees. We do not consider it a 'food,' as the proportion of sugar is small relatively to the pea flour, but as a stimulant in early spring it will probably be found useful. 2. Do not reduce the sizes of your entrances.

S. L. B. and FRANK M'D.—The dead bees have been forwarded to Mr. Cheshire for examination.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[1] How do the bees ascertain the presence or absence of the queen in a populous hive?—H. P. JONES.

[2] Is it generally advantageous to prevent swarming?—H. E.

[3] Is it desirable to have upward ventilation in winter?—X. Y.

* * *Numerous letters and communications are postponed to our next issue.*

A New Era in Modern Bee-Culture.

OWNING the largest Apiaries in the kingdom, I can offer great advantages to those who wish to study the true economy of Practical Bee-keeping.

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THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

OUR WAX IMPORTS AND EXPORTS.

By the official publication of the Annual Statement of the trade of the United Kingdom with foreign countries for the year 1881 we are able to have a clearer idea of the amount and value of the imports of wax than it has been possible to arrive at with regard to honey. The following tabular statement specifies the countries from which wax is imported, with the amount and value thereof:—

	cwt.	£
Germany	7756	20,216
Holland	427	2601
France	750	4152
Portugal	269	1275
Italy	546	3336
Morocco	525	3067
West African Settlements ...	412	2326
Madagascar	405	2024
Mauritius	903	4774
British East Indies	340	2469
Japan	4951	8855
Australasia	624	3744
United States of America ...	5176	21,041
British West India Islands ...	1351	9142
Chile	620	4351
Brazil	2031	9869
Other Countries	481	2580
	28,258	105,813

From the above we note that the mean price per cwt. is 3*l.* 14*s.* 10*d.* There are many kinds of wax, such as vegetable, mineral, and insect wax, and we may, from the above table, deduce the nature of the wax imported. That from Japan is only 1*l.* 15*s.* 9*d.* per cwt., while that from Holland is 6*l.* 1*s.* 10*d.*; from Italy, 6*l.* 2*s.* 2*d.*; from British East Indies, 7*l.* 5*s.* 3*d.*; from Australasia, 6*l.*; from British West Indies, 6*l.* 15*s.* 4*d.*; and that from Chile, 7*l.* 0*s.* 4*d.* Comparing the countries importing with those of last year we mark the absence of China and South Africa, which were large contributories to the amount.

The following amounts are re-exported:—

	cwt.	£
Russia	1085	2925
Germany	1858	7021
Holland	1154	4264
France	1869	7337
Other Countries	4412	14920
	10,378	36,467

The total quantities of wax imported during the three preceding years are,—

1882.	1883.	1884.
35,538 cwt.	28,192 cwt.	28,258 cwt.

The value of the above for the same years is,—

126,926*l.*	97,142*l.*	105,813*l.*

The amount of the wax exported for the same years is,—

16,441 cwt.	12,504 cwt.	10,378 cwt.

And the value thereof,—

55,074*l.*	41,339*l.*	36,467*l.*

From the above figures it is clear that the amount of wax imported is very large. Through the use of the honey extractor and its increasing use for comb foundation wax is becoming scarce and of more value. Bee-keepers themselves are large consumers of wax, and it is very desirable that more should be raised in proportion to its requirement in this country. Is it possible for the Honey Companies to direct more attention to this product of the honey-bee, and so enlarge the sphere of their labours by becoming honey and wax merchants?

OUR HONEY IMPORTS.

We are pleased to be assured, through a letter, to be found on p. 16, from S. Seldon, Esq., of the Statistical Office, Custom House, that the imports and exports of honey will, from January 1, 1886, be found in the Annual Statement of Trade with Foreign Countries.

In our number for February 1, 1885, we suggested that a representation should be made to the Board of Customs of the great interest now taken by the bee-keepers throughout the United Kingdom in having reliable and official information respecting the import and export of honey, and that the necessary returns should once more be restored to their place in the Annual Statement, from which they were eliminated in the year 1871 as being 'insignificant and of no interest to the community.' 'A change has come over the spirit' of the community respecting the importance of honey, and the information is no longer of no interest, but it is eagerly sought and earnestly canvassed by all bee-keepers. We desire to return our thanks to those who have made the representation, and congratulate them on the success achieved. From

this time forward we shall find honey take a recognised position, and we shall have in an official statement a greater amount of information respecting it than that hitherto kindly furnished to our columns by Mr. Bellairs.

The volume containing the Annual Statement of the imports and exports is not, however, published till a considerable portion of the year has passed, and, therefore, those returns that we are specially interested in would not in the ordinary way make their appearance till somewhen about September 1887. This would be a long interval, but happily, through the continued courtesy of Mr. Seldon, and the kindness of Mr. Bellairs, the monthly information that has been given in our *Journal* will still be forthcoming. We are sure that we are expressing the sentiments of all bee-keepers in tendering our best thanks to the above-named gentlemen for the trouble they have taken in furnishing the information we have received from them for the last three years, and also for their offers of promised assistance for the future.

A tabular statement of the value of the imports of honey for the years 1883, 1884, 1885, will be found on p. 17, from which it will be seen that the value of the imports during the last year has been 61,344*l.*, about 1000*l.* less than in the previous year. Now if we calculate that foreign honey realises 1½*d.* per lb. it will be found that this amount represents no less than 2,738,347 lbs.: and on the supposition that there are no re-exports it will be seen to what an extent honey is used in this country. The figures prove also the exertions that must be put forth by bee-keepers if they desire to checkmate these imports and to reduce their amount. There can be only one way by which this can be done, and that is, that the honey placed before the British public should be of superior quality, and not exceeding in price, that imported into this country. The foreign produce has many charges to defray, such as package, freightage, commission, &c., that our own honey is free from; and we trust, by increasing the size of our apiaries, by greater attention to production, by taking advantage of improved appliances, and by acting on the conviction that bee-keeping may be made a profitable industry, that in the future the amount of imported honey may be diminished and a wider field be given to our home produce.

BRITISH BEE-KEEPERS' ASSOCIATION.

Forthcoming Meetings.

Wednesday, January 20th, at 105 Jermyn Street. Quarterly meeting of County Representatives, to commence at 4.30 p.m. Quarterly Conversazione at 6 p.m. The Secretary will be glad to receive notice from any member who may be desirous of bringing forward any subject for discussion. Microscopical and other objects are solicited.

Wednesday, February 17th, at 105 Jermyn Street. Annual General Meeting of members, the Baroness Burdett-Coutts, President of the Association, in the Chair. Notices of motions for this meeting must be received by the Secretary not later than January 31st.

The following candidates were awarded certificates at the second-class examination, held on November 7th last, viz.:—

Burt, E. J., Tansley House, Gloucester.
Coleby, H., Wargrave, Berks.
De Lacy Ahern, W., Sutton, Surrey.
Lewis, L. Oswald, Llandilo.
Lily, E., Norwich.
Meadows, W. P., Syston, Leicester.
Pridmore, S., Hinckley, Leicester.
Slade, W. D., Promenade, Cheltenham.
Spurrell, W. Carmarthen.

GLEANINGS.

In the *American Bee Journal*, the Rev. L. L. Langstroth states that Italian bees, although disposed to rob when they have a chance, are much more courageous in self-defence than black bees. He relates that on one occasion when he was examining a stock of bees, and had several of the combs resting against the outside of the hive, the arrival of a visitor caused him to forget all about it until his friend called his attention to robbing going on. They went to the unprotected hive and found it besieged by thousands of robbers. The bees on the combs outside were vainly striving to protect them. Although many were killed, it made no difference. The combs were replaced, the hive closed, and the front entrance opened to full width. In a few moments the bees had their line of battle spread over the whole alighting board. Numbers of dead and dying were brought out of the hive, and not a robber was admitted, but attacked and killed if he could not get away. The robbing spread to all the hives, but as the bees defended them, in about half-an-hour it ceased. When robbing of this sort is going on, the Italian bees defend their hives much more courageously than the Blacks.

He also relates of another hive, only having a slight touch of Italian blood, that when robbers made their appearance he closed the hive, but accidentally left a corner open. Attracted by the noise of the bees, he found that this large and very strong colony was being robbed, the cowardly black blood had not proved equal to the emergency. When the corner was closed tight, there was no line of battle formed, resistance had ceased, and it was necessary to close the entrance and cover the whole hive with wet cloths in order to save it. Robbing spread, but the Italians made such a fierce resistance that the robbers were soon beaten off.

With regard to black bees, Mr. Langstroth says that their eagerness to rob when forage is even a little scarce, and their deficiency in pluck, by which they are so often, when the yellow races would not be severely injured, are, with him, sufficient reasons for discarding them.

In *Gleanings*, W. L. Hutchinson gives his experience of hiving swarms with and without foundation, and states that foundation in the brood-nest is a damage when the swarms hived upon it are given access to a surplus apartment furnished with foundation. Twenty swarms were hived upon foundation, and twenty-five others were hived upon empty frames, except starters of foundation half an inch wide. The swarms were hived alternately, and those on empty frames stored 16 per cent more honey. Their brood-nests were 7 per cent lighter than those given foundation. In the aggregate, *i.e.*, counting both the honey in the sections and in the brood-nest, those having foundaton fell 5 per cent behind.

A. I. Root says in *Gleanings*, that it seems destined to be an established fact that new swarms that have an opportunity of working in sections well supplied with foundation are better off without foundation in the brood-frames. However, even this has its drawback, as many of the combs contain more or less drone-comb. Mr. Root prefers all his combs built on wired foundation, even if they cost something extra. He also thinks thinner foundations should be used both for brood-combs and surplus honey; he now makes thin foundation twelve square feet to the pound. Even this he thinks too thick for sections when full sheets are used.

In the *Bee Keepers' Guide*, W. F. Clarke maintains that bees hibernate, and quotes Kirby, who states that 'every gradation is to be met with between ordinary sleep, the imperfect or abnormal hibernation of some animals, and the profound hibernation of others, in which all the functions of life are suspended.' Mr. Clarke does not claim for the bee that its hibernation is 'profound,' but only 'imperfect' and 'abnormal.' Bees relapse into quietude and inactivity under favourable conditions, and when this takes place they consume the minimum of food. Under such conditions they either retain their fæces without inconvenience, or void them in the dry powdery form which does not befoul the hive. As 'science clearly shows that extreme retention of fæcal matter is dangerous to all animal life,' it is reasonable to believe that nature has provided a mode of relief when bees are kept in their hives by reason of the temperature. He sums up by giving the following as his formula for successful wintering:—Fix your bees in such a way that they will feel comfortable, relapse into a state of repose, become inactive, eat very little, void an infinitesimal quantity of excrement, in a dry form; and you may smile at the rigours even of such a winter as that of 1884–5.

In the *Bee Keepers' Magazine*, L. C. Root says, that before the moveable frame-hive was invented, if by chance fifty pounds of box honey were secured from a single stock in a very favourable season, it was considered a remarkable yield; after the moveable comb hive was more generally in use, 100 lbs. were as easily obtained. Then with more experience and better methods, twice this amount was obtained, and still we advanced until as much as 300 lbs were reported. During the season of 1872, he took 225 lbs. from each of several stocks. Since the use of the honey extractor the honey which could be secured has greatly increased. From 100 to 150 pounds of extracted honey were easily secured by proper management in good seasons. In 1870 he took from a single stock 361 lbs., and since this time he has taken as much as 484 lbs. from one stock. In 1881 he took 9727 lbs. from forty colonies, or an average of over 243 lbs. per hive. His opinion, based upon close observation, is that the possibilities to which we shall yet attain are far from reached.

Christian Sichler, in the *Deutsche Illustrierte Bienenzeitung*, gives his experience of wintering three stocks of bees by burying them in the earth. A hole was dug in the ground three spades deep, one metre wide and two metres long, and as the ground was level another and a deeper hole was dug close by to receive the water draining from the former. The hole for the reception of the hives had a layer of straw placed at the bottom about a hand high, and the sides were also lined with straw. The hives were covered with cloths, and the entrances were protected against mice by means of perforated zinc. On the 2nd November, 1884, it being a fine day, the bees thus prepared, were weighed and placed in the hole. Straw was placed over the hives, and on this a spade depth of earth was put, then a layer of manure, just as potatoes are kept through the winter in Northern Germany. No air-hole was provided. It being fine on the 2nd February, 1885, and bees in the apiary flying freely and collecting hazel pollen, the opportunity was taken to examine the hives. On withdrawing them from the hole, they were found not only alive but in a flourishing condition, showing no signs of damp or dysenteric spots. The average loss in weight per stock was 2 lbs. during the three months. As soon as the bees were placed on their stands they commenced flying out, and they were at once examined. The first one opened had seven frames, of which six were covered by bees in the autumn. Now there were enough bees to cover five frames, the third and fourth frames being filled with capped brood. The other hives were in an equally satisfactory state. The development of the bees in these three stocks was much more rapid than in any of his other hives.

ASSOCIATIONS.

BUCKS BEE-KEEPERS' ASSOCIATION.

The Committee of this Association has just issued its annual Report for 1885, which records much activity during the past year, and announces several important innovations for 1886. Amongst the latter, we find that the Association proposes to send experts, as far as possible, at any time when applied for, without the necessity of delay until the next expert's tour. Hives at cost price, upon easy terms of payment, are also to be supplied to cottagers. The *Bee Journal* is in future to be supplied at reduced price to members,—a specially large reduction being made to artizan and cottage members. The Association has, further, entirely revised its prize schedules and conditions of exhibition, with a view to increasing the efficiency of its honey shows.

We notice that the members now number 421, which represents eighty-three more than in 1884. The annual general meeting and drawing for prize hives are fixed for Thursday, January 28th, at the George Hotel, Aylesbury, at noon.

The annual general meeting of the Notts Bee-keepers' Association will be held at the People's Hall, Heathcote Street, Nottingham, on Saturday, Feb. 20th, at 3 p.m.

Selected Query.

[22.]—*What is the best method of securing surplus honey in sections during the honey season?*

I build up a strong stock to cover at least twelve frames. When the season arrives I remove three frames, returning the bees from them to the hive, examine all the other frames and cut out queen-cells, if any. Close up the divider and place the rack of sections on the frames. The bees being so crowded are forced to enter them, and being in them set to work at once. By this means I am enabled, even within 2½ miles of the Royal Exchange, surrounded by potteries, gas-works, builders' yards, &c., to obtain a return. Last year I got twenty-one good sections and ten partly-sealed off one stock; other strong stocks which I did not crowd before putting on sections gave little or no return. I prefer only one rack deep, and I do not remove the racks from the hives to take and replace sections, as I find far less disturbance is caused by doing it on the hive, and less danger of crushing queen or bees.—F. Lyon.

The best method of securing surplus honey in sections is to put a tray of sections on an adapter placed over the bar-frames, and made *as warm* as possible. When the bees have about half filled the sections, raise them on the top of another tray of sections, and so on. As soon as the top sections are completed, they should be removed. If the sections are filled with new white combs, the bees take to them at once. The sections should never be filled with foundation, as it sticks to your teeth when you eat the combs.—William Carr.

My plan is as follows:—Having calculated as nearly as possible the time of the honey flow, I decide which stocks to run for sectional honey, and by stimulating and assisting where necessary with frames of hatching brood from other hives, I get them to their full strength by the commencement of the honey flow. Each hive will at this time contain a strong colony on eleven frames. Before placing on the section rack, I take out two frames, the ones I can best spare, being careful to leave a good proportion of the brood at the point of hatching. The bees are by this plan crowded into the super, and, weather permitting, storing in the sections commences at once. When these are progressing satisfactorily, another rack of sections is placed underneath, and more as time goes on, if necessary, the uppermost rack being taken off as completed.—C. N. White.

The above question seems too general for a short answer, but my own experience would suggest early careful stimulating, so as to ensure a strong stock. As soon as the honey begins to come in, and the cells at top of frame are beginning to be sealed, racks of seven, fourteen, or twenty-one sections (according to district, crops, or strength of hive) filled with foundation, to be placed on top of frames, and well wrapped up. If bees are slow to go up, open the front of hive right across, or lift front off floor-board about quarter inch, which will induce them to go up. When first rack is filled, if not sealed, it should be raised, and a similar rack placed between first rack and top of frames, so that bees may be building out and filling No. 2 while No. 1 evaporates and gets sealed. Of course sealed sections to be removed as soon as possible.—C. Brown.

Have your stocks of bees strong and the frames of combs in the hives filled with brood by the first flow of honey.

To do this, commence stimulative feeding (if the weather is suitable) about six weeks before the time the fruit trees are usually in bloom, the bees being first crowded on just as many combs only as they cover from top to bottom, dummies being inserted on either side and keep all snug and warm with quilts. In a few days the centre combs will be filled with eggs and brood; they should then be spread, and the outside combs put in the centre of the brood-nest, any sealed honey being first uncapped. In seven or eight days more another frame should be inserted. An additional comb should (in favourable weather) be inserted once a-week until the hive is full. In good seasons the bees will by this time be working freely every day, and if the spreading of the brood and the addition of combs has been done with discretion, the increase will have been very considerable.

About the middle of a warm, fine day, the combs should be thoroughly examined, and eight of the frames containing the most brood should be closed up with the dummies in the centre of the hive. The remainder of the frames should be used for strengthening weaker stocks by inserting them in the brood-nest. A rack of sections, prepared with foundation and separators, must now be put on and closely fitted to the top of the hive, carefully covered up, and kept as warm as possible. Should the hive contain reversible frames, these should be inverted previous to the sections being put on. The brood-chamber having been contracted, the bees will of necessity be crowded into the sections, and will commence to work in them at once. If honey is coming in freely, considerable progress will have been made in a few days, and when the majority of the sections are three-parts filled with comb, the rack should be raised, and a second, similarly prepared to the first, should be placed between it and the stock hive. The bees will now be working in all the sections, and when those in the upper racks are nearly sealed over, or they show signs of over-crowding, a third rack of sections should be inserted as before immediately above the brood-chamber. The top rack of sections should now be examined, and removed as soon as filled, and if the honey-flow still continues, another one should be inserted as before.

When space is given to the bees by judiciously tiering up the sections in this way, swarming will generally be prevented. If, however, they throw a swarm, hive it on *six* frames filled with foundation, putting the swarm in the place of the old stock-hive, which should be removed about three feet to the right or left. The next day the crates of sections on the old hive should be taken off and placed on the swarm; the bees will take to them at once, and finish them very quickly.—John M. Hooker.

By having strong stocks ready for the first glut. By supering on top of the hive. By judiciously enlarging the super as required, not to give a check to the bees' activity during a glut, and wrapping up the super according to the rise or fall of the thermometer.—Amateur Expert.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

[23.]—The value of honey imported into the United Kingdom during the month of December 1885, amounted to 2318*l*.

[From a private return supplied by the Principal of the Statistical Department, H. M. Customs.]

This completes the third year of our regular monthly returns, for which we are indebted entirely to the courtesy of Mr. Seldon, the Principal. Below will be found the annual statement. The figures themselves, though of sufficient interest to bee-keepers generally, seem to call for no remark from me, unless indeed it be to say that British bee-keepers, notwithstanding the notorious tenfold increase of their production, have so far failed to reduce to zero the purchase of foreign honey. The following letter will be read with interest:—

'*Statistical Office,*
'*H. M. Customs,*
'*6th January*, 1886.

'*To* E. H. Bellairs, Esq.

'Dear Sir,—

'In sending you the December account of the importation of honey, I am glad to be able to inform you that, on a representation of the Board of Customs to the Lords of the Treasury, the suggestion contained in your letter of the 14th February last, that *honey* should become a recognised article in the list of Imports has been approved by their Lordships, and that from the 1st inst. the particulars of honey will be duly registered in the books of this office. The figures are at present too small to entitle them to a place in the monthly accounts of trade, but they will be given in the "Annual Statement of Trade," published by this Department, and I shall meanwhile continue to send you as usual each month a statement of the quantities imported, which I hope will henceforth be more trustworthy in consequence of the official recognition of the article. I send you one of our lists of Imports.

Yours very truly,
S. Seldon.

Tabular Statement of Imports.

Month.	1883.	1884.	1885.
	£	£	£
January	1,612	2,034	801
February	2,175	2,234	5,385
March	1,535	2,545	5,401
April	1,518	4,962	9,939
May	4,781	5,245	9,966
June	3,534	15,387	6,848
July	7,496	10,089	12,116
August	6,262	1,019	2,331
September	972	6,453	1,516
October.....	725	5,388	3,534
November.....	1,908	4,272	1,185
December.....	1,260	2,729	2,316
	£33,778	£62,357	£61,344

E. H. Bellairs, *Wingfield House, Christchurch, 8th January*, 1886.

ROOFS OF HIVES.

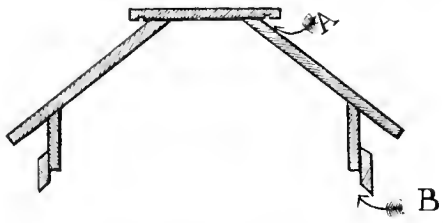
[24.]—Your note to my letter in the last number of the *Journal*, respecting the roofs of hives, contains a very 'useful hint'; but, with your permission, I would say that, if zinc is properly put on, it does not unduly increase the heat of the roof in summer, as you suggest; for, if it is put on the top of boards which overlap one another, it does not lie close to the wood, but allows a current of air to pass between it and the roof, so that indeed the temperature is kept more equable than without it. If the top of the roof be a smooth surface the same end can be attained by the use of two or three slips of wood. The additional weight I find but trifling, for my zinc is very thin.

But after all I still feel that hive-makers ought to be able to make a wooden roof perfectly waterproof without any such contrivance. Why don't they?—F. G. Jenyns, *Knebworth Rectory, Jan. 7th.*

DRYNESS OF HIVES.

[25.]—I have experienced similar trouble to the Rev. F. G. Jenyns, in keeping my hives dry, and as it is imperative that no moisture should be permitted to insinuate itself through the hive roof or sides, I contribute a few notes on my difficulties. I intend no reflection on the great makers of hives—as a rule their workmanship is excellent and timber well seasoned, if a reasonable price is paid. Many of the very cheap hives that I have seen it is impossible to keep the wet out of, unless they are covered externally with zinc, calico, or paper felt, and well painted; but all these are more or less objectionable to me. The zinc has sharp edges and corners, that will tear one's flesh or catch in one's clothing, besides adding to the weight, and paper felt and calico do not add to the neatness of the hives as seen in the garden.

Some hive-lids are made of feather-edge weather boards, others are sloped 'lean-to' fashion, and the joints in the boarding are covered with strips. These, when painted, are both alike weather-proof; but after a very hot sun has been shining upon them for a few weeks, and we get a spell of protracted wet, then comes the bee-keeper's trouble. For a dog's kennel, or fowls' coop, the amount of wet that gets in would do no material damage, although far better kept out even from them; but with bees it is often sufficient, if not detected at once, to lead to mouldiness and all the accompanying evils. If you are not so fastidious as 'A. E.' cover them at once by all means; but I adopted the style of cover in the accompanying cut, as, in my judgment, being preferable to the other two kinds I have enumerated above. I had prided myself on their weather-resisting powers, when I found my first trouble was at A., so I remedied that by plowing two grooves in the top board, as seen in the illustration. My next trouble was between the bottom of the lid and the top of the hive walls; this I cured by chamfering off the bottom edges of the plinths around the lids, as seen at B. I also painted the edges of the hive walls and lid, and last winter I was rewarded with dry hives. You will see the lids have ample eaves: but you will



remember how old Sol has blazed down upon us this summer. I thought I was secure; but the first soaking rain this autumn found out where the sun had drawn the plinths away from the sides of two of the lids, and on examination after the rain I find the quilts of these two wet, as a consequence. I am not to the end of my troubles yet. So when spring comes I had resolved what to do, as I never intended to be beaten by moisture. But on looking at our friend Walton's illustrated hive in the last number of 'our' *Journal*, I see he has forestalled my idea—the lid is made large enough to overhang the hive side without a plinth. This is a step in the right direction. He will take another if he does away with the plinth at the bottom and makes his hive-sides overhang his floor-board.

I am no manufacturer, as I have previously told your readers; but take a great pleasure in making my own hives. My experience is, that no amount of putty and paint, good as they are in their way, will effectually keep out wet when the wood is 'shaky,' or the sun can open joints, as in our changeable climate the soaking rain is upon you and the mischief is done before you have time to look around. There are certain things only experience can teach, and I believe the construction of hive-lids that are absolutely waterproof is one of them; and I am very glad Mr. Jenyns has opened the question.—Amateur Expert.

QUEENS LEAVING THEIR HIVES.

[26.]—I feel sure that your worthy correspondent, Mr. P. H. Phillips, will not think me ungracious if I totally join issue with him in the remark 'that queens leave and return to their hives oftener than most people imagine.' I have been taught, and have yet to unlearn, that there cannot be an effect without a cause. Why need *Majesty* unroll her royal wings and flash her splendour in the rays of the shining sun! Nature is an out-and-out Utilitarian. Just fancy her Imperial Majesty Empress of India and Queen of Great Britain, &c., walking out to one of her lodges at Windsor for a pocket-handkerchief!

I am almost certain of this that the mother bee *never leaves* the hive except for swarming purposes, or to get an opportunity of using those exquisite eyes in the choice of him who is in so large a measure to determine the nature of her offspring as long as she herself shall live. I have had a unicomb observatory hive in my house for the last few years, and always tenanted, and *never* have I ever failed, morning, noon, or night, to find the queen, though for scientific purposes or from mere motives of curiosity, I may have opened it twenty times a-day.

I should greatly have liked you, sir, to have seen our veteran East Anglian bee-keeper, the Rev. J. Lawson Sisson, of Edingthorpe, upon one of the days of our Norfolk Agricultural Show, held the year before last in this town, with his watch in hand, intent upon every second timing the various movements of the mother-bee in my spacious Observatory Hive! Talk about enthusiasm, we had it there in very essence! 'When,'

as numerous bee-keepers have said to me, 'shall we have the pleasure of seeing him again upon the Committee of the Norfolk and Norwich Bee-keepers' Association?' I do not think that—with all due respect to our present Committee—we can afford to dispense with the services of a man so highly honoured in the bee-world as the Rev. J. Lawson Sisson. 'Keep pace with the times' has been his motto evidently, as indeed it should be of every man, and especially of bee-keepers.—ALFRED E. BOOKER HILL, *The Chase, King's Lynn.*

FIXING FOUNDATION.

[27.]—I am glad to find that, besides myself, there are others who are taking up the system of fixing foundation and not selfish enough to patent them, as I think it detrimental to the bee-keeping world. But I must point out one or two things in these little inventions. First, they must be simple, with as little complication as possible, still maintaining the full strength of the top bar, which is a great consideration. My next point is to utilise all existing frames that have solid top bars into the new system. For this I have invented the very thing, simple, but effectual; so simple that even a school-boy could either make one, or convert an old bar into my principle. I should only be too glad to give every information respecting it.—W. WILLCOCK, *Bowers Fold, Doncaster.*

[We should be glad to have a description of the contrivance for the benefit of our readers.—ED.]

BEE MANAGEMENT.

[28.]—Will you allow me space to suggest a system of bee-management, which I think may commend itself to some of the many bee-keepers who keep bees, not as a commercial enterprise with a view to profit from the abundant production of honey and swarms, but rather for pleasure, and with the object of obtaining some honey for their own use. With the former, the plan I am about to suggest cannot find favour, indeed to them it would be a step backward; with the latter it may, because of its simplicity, and because it does not altogether ignore the much-abused skep. For I think even the warmest advocates of the bar-frame will admit that bees can winter comfortably in a well-protected straw hive with plenty of store.

Each colony is wintered in a skep placed on a light floor-board, and within a large bar-frame hive, which provides an excellent wintering covering for the skep. If we use Standard frame hives it is advisable to have our skeps made in an oval form, as a circular hive measuring less than 14½ inches in diameter is much too small for a strong colony.

In the spring, when the bees are ready for swarming, it is a matter of choice whether we drive them and make an artificial swarm, or run the risk of securing the natural one. The skep is now placed on a separate stand beside the frame-hive. Into the latter we put the swarm on combs or foundation, making sure that, by placing it nearer the original position, the swarm is as large as the stock can possibly afford to lose, inasmuch as that from it we expect all our surplus honey.

With favourable weather the swarm in the frame-hive, presided over by a vigorous queen, will soon be storing honey; but as we do not want it for the 'early market' we need not trouble to extract. Let us watch, however, to prevent its throwing off a cast by giving timely, and in a good season, abundant room. For this purpose either a very long hive, or else a second or third storey, will be necessary.

When the honey season is nearly over remove the queen from the frame-hive; and twenty-one days afterwards unite the bees in it to the original stock in the skep, where an abundant supply of stores, to keep the united colonies through the winter, will have been provided.

From the combs in the frame-hive we extract a lot of well-ripened honey, and then store them away for future use, they being clear of brood owing to the removal of the queen.

The skep is now placed in the frame-hive as before, and the bees are left to spend the winter in peace and plenty. Dare I suggest that they enjoyed peace too during the summer, at least, compared with those subject to the frequent manipulation of ordinary amateur bar-frame management?

If after-swarms come out, either unite them to the first swarm, or place them in a temporary frame-hive convenient to it, and treat them in the same way. If desirable, sections can be worked.

In a good season the original stock may be able to supply some super honey in addition to the winter store.

The advantages are:—Manipulation and attention reduced to a minimum. No feeding required. No permanent increase of stocks unless desired. Each colony goes into winter quarters strong in numbers, well stored, and provided with a young queen.

Again, let me say, this is not for advanced bee-keepers, but for those who desire to keep a few stocks, and who cannot give them much of their time and attention.—W. E. BEST, *The Cairn, Dec. 26th*, 1885.

A BAGSTER HIVE.

[29.]—I brought one of Bagster's hives that I made fifty years ago up to London, out of West Sussex, in 1837, and located it in a garden in the Holloway Road, near the Camden Road. There it remained sixteen or eighteen years. At that time I lived in the City, but I used occasionally to visit the garden, and look—rather superficially, I admit—at the hive. I had some honey to take several years. It used to swarm, and the bees always made off Highgate way. It kept very dry and healthy, till one very wet autumn the rain soaked through, and the bees perished. It was a source of pleasure to the friends with whom it was left, and to their visitors while it kept on at work. It was easy to manage, but, as you say truly, it has become obsolete now.—J. W. P.

'THE BUSY BEE.'

[30.]—Under this heading, there is, in your *Journal* of the 7th instant, an interesting calculation as to the number of clover-tubes that bees must suck, 'in order to obtain but one pound of honey.' That number is estimated at 3,500,000. But in order to show how industrious the busy bee really is, it should be taken into account that each bee explores many tubes from which the honey has already been sucked, and therefore does a great deal of work for which no allowance has been made in the calculation. Whilst watching bees at work, I have frequently been struck by the pertinacity with which they insist on exploring *each* cup or tube in a flower, though I longed to tell them that they were wasting time, because I had seen ever so many other bees do the same thing. I have also noticed how much they seem to be attracted by the larger and taller flowers, and this causes further loss of time, as I have endeavoured to show more at length in my little story *Buz*, of which you gave such a very kind notice last week.—MAURICE NOEL.

COMB SECTION HONEY.

[31.]—Referring to the various suggestions for helping cottagers by instructing them how to get larger harvests of superior comb-honey, by supering inverted skeps, &c., I should much like to hear the experience of people capable of judging in other parts, as I think the general

experience in this county is, that comb-honey in sections, however perfect, is practically unsaleable.—C. H., *North Devon.*

YORKSHIRE COUNTY ASSOCIATION.

[32.]—A few weeks ago a correspondent of the *B. B. J.* made some inquiries in its columns as to the doings of the County Association, and as I have seen no reply to his queries, I should be glad to supplement them by drawing the attention of the hon. sec. to our needs. It would be most unreasonable to expect him or the county expert (if we have one) to be acquainted with the names and addresses of bee-keepers who are not members of the Association, and who by that means would have their whereabouts made known. As I have only recently joined the B. B. K. A., I should be thankful to the hon. sec. if he will inform me of the steps necessary to be taken for the formation of a branch, and would have done this by letter direct did I not believe that through your columns general attention might be drawn by these remarks to the unworthy position Yorkshire (the largest county in the kingdom) occupies in bee-keeping, so far as it is exhibited in the returns and literature published in the *B B.J.*—R. A. H. GRIMSHAW, *Cray Hill, Horsforth, near Leeds.*

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[33.] *Prevention of Swarming.*—(H. E.) Yes, the great aim of the honey getter should be not to tempt the bees to swarm by keeping them at work, and not allowing the queens to get worn out. Once having prepared to swarm I prefer to allow them to do so.—AMATEUR EXPERT.

[34.] *Ventilation.*—(X. Y.) It is not only desirable but absolutely necessary to profitable bee-keeping, to cover bar-frame colonies with porous material during winter, and avoid draughts.—AMATEUR EXPERT.

[35.] *Is it desirable to have upward ventilation in Winter?* (X. Y.)—When bar-frames were originally used, it was the practice to winter bees on all the combs. The division-boards were then called 'dummies,' and the only use made of them was to remove them to give lateral space for extraction of the frames without rolling the bees between the combs. One hive-maker at least reduced the dummy to a hinged side to the hive to give the necessary room. Under this system it was found that the moisture from the cluster condensed upon the unoccupied combs, and rendered them damp and mouldy. To obviate this, porous quilts were introduced. Now that we crowd the bees into as few combs as they can cover, the danger of condensation no longer exists, and hence the need for porous quilts has disappeared. When feeding in autumn, it is absolutely necessary to give upward ventilation to allow the vapour from evaporation of the food, to a proper consistence for sealing, to escape. But in winter it is not required. I use the summer ticking on the frames, over this one thickness of house-flannel or felt carpet, on this I lay a board, and on the board a brick. It is only when I find it necessary to give a cake of candy that I alter this plan, and then only because a board will not make an air-tight joint all round. I then use a bottomless tray, with canvas tacked very loosely over it, filled with chaff or cork-dust. I place the cake of candy, made by pouring it into a papered saucer, on the frame, over it the ticking and flannel or felt, and over that the tray of chaff, which I tie down so that no draught can exist. I endeavoured to raise a discussion on this point as long ago as August, 1883, by a letter in the *Journal*, p. 135, Vol. XI., headed, 'Shall we again adopt Crown-boards?' The only remarks made in reply were by Mr. Simmins, p. 154, who agreed with me.—F. LYON.

[36.] *What is the best plan for Ripening Honey?* [3]—Honey, when removed from the hive, is best ripened by the natural heat of the sun, which allows of gradual evaporation, and this will be attained by placing the extracted honey in open shallow pans (milk-pans) in a close-fitting (bee-proof) wooden house, tarred or painted black to attract heat. Honey in the comb will also be similarly improved by being placed in such a house for some days.—ALFRED NEIGHBOUR.

Queries.

Queries and Answers are inserted free of charge to Correspondents. Where more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[37.] *Comb and Extracted Honey.*—What proportion does the yield of comb-honey bear to the yield that might be obtained from the same hive by the extractor?

[38.] *Honeycomb Designs.*—Can any one inform me how the honey-comb designs such as that exhibited at the Rutherglen Show, as I saw stated in the *B. B. J.* for October 15th, 1885, is made, as I should like to try to get my bees to work some this summer?—E. H. H.

[39.] *Winter Fighting.*—There has been a good lot of fighting at one of my hives this winter, when the bees have been out on fine days. I counted over one hundred dead close to the front one day. Those wishing to go in were calm, but those at the entrance pounced on the interlopers like bull-dogs, and soon disposed of them. In the middle of September I put a bar of comb and bees from one hive, and two from another hive, to strengthen a very weak lot; but I am not quite sure if either of these bars were from the one where fighting has been seen this winter. Is it possible that when they come out for flight that they may return to the home they knew at the early part of September, that is if any were from this particular hive? I have only four stocks.—E. P.

[40.] *Spring Management.*—May I trouble you for information as under, so that I may *now* know how to prepare for it? Can I do this to get section honey? Hive No. 3, stimulate March 15th: No. 4, stimulate March 15th; No. 5, stimulate March 15th; and when I find brood in every cell and hatching out with hive full of bees, say last week in April, give a top hive of ten frames, made up of two worker combs drawn out, and eight sheets foundation 'worker.' Then, May 7th, if warm, or as soon as all the frames are full of brood, add either a third hive of ten frames, or rack of twenty-one sections to draw out, then a second and so on, to keep them busy until after the swarming season is over. Then the last week in June, *remove* sections, and No. 2 or top hive, replacing racks of sections, and adding a new one; strengthening other hives with frames of brood removed, or placing *two* of these *top hives* together to make *swarm*, and *super them*, or can I safely super these three stocks with their top hives on, having twenty brood frames under section rack, with any chance of filling sections? The bees in question are Ligurians.—J. K. GOODALL.

[41.] *Rapid Mortality in a Wintering Stock.*—I send a box of dead bees, hoping that some of your correspondents may tell me what has happened to them. They were in a double-sided wood hive, which stood through last winter very well and gave me at least one swarm and 40 lbs. of section honey. When removing the last rack of sections I left them ten frames—some of them completely and the remainder half filled with

honey—and in every way as well supplied and protected as possible. I left all the frames as they were, filling up the hive and narrowed the entrance to a half inch. There is a tray of chaff covering the two calico quilts and all is quite dry. About three weeks ago I found several bees dead outside that hive. There are nine other hives all around the plot and not a dead bee is to be seen near them. Since that time the heap of dead bees has increased outside the first-named hive, and to-day it amounts to a large plateful. I partly examined the hive from the back only, and the five frames I saw were well stocked with sealed honey. I did not give any syrup to them in the autumn as they had sufficient stores after the summer. I do not like to pull the hive to pieces for a thorough examination at this time, and as they cannot want food I could do no good by it. It has been suggested to me that they may have contracted some disease which may be discoverable with a microscope.—FRANK MCDONOGH, *Killarney, Dec. 26th*, 1885.

[42.]—*Great Mortality in a Stock of Syrians.*—While my hives generally appear to be wintering quite safely, one hive is being almost exterminated from some unknown cause. This is a colony of pure Syrians, and a very full one, having nine or ten frames for the winter. The bees are now being carried out in hundreds and thrown over the flight-board, and sometimes left on the flight-board, in such heaps as almost to block up the entrance. I enclose a pill-box full of these by this post. Perhaps Mr. Cheshire, or some other *savant* among your friends, would be kind enough to make an examination—a *post-mortem*—to ascertain, if possible, what can be the disease.—S. L. B., *Trory Parsonage, Ballycassidy.*

Review.

HOW TO MAKE THE LAND PAY. By H. P. Dunster, M.A. (Longmans & Co., 1885.)—In this admirable work the Vicar of Wood-bastwick supplies information as to the various profitable industries connected with the land and suitable to all occupations large or small. He shows by reference to the Custom House returns that a yearly sum of little short of thirty-eight millions of pounds is being paid for the importation of articles from abroad which might be equally well produced with profit in this country; and in a series of well-written chapters gives instructions, so clear that he who runs may read, by which the farmer, large or small,—nay, even the cottager—may undertake and carry out the production and marketing of numerous articles of daily demand and consumption. The subjects dealt with by the author extend from dairy-farming to lavender-growing, from orchard fruits to ensilage, from rabbit-farming to mushroom culture, from fish-farming to bulb-growing, &c., well treated in a vigorous practical manner, evidently the result of actual knowledge and experience. Let us take the chapter on bee-keeping. In ten well-written pages we have a concise account of the best modern systems of bee-keeping, and words of instruction and encouragement derived from the author's own experience. The following description of a Polish bee-farm shows what might equally well be done in this country towards meeting the demand for wax and honey, for which we are paying to the foreigner the annual sum of 150,000*l*. In all farms in Poland there will be found an orchard generally sheltered from the north by the farm-buildings, or forest trees, and a portion of this orchard is used as the bee-garden. When the larger landed proprietors go in for bee-keeping, the position selected for the apiary is often at the foot of some hill on the borders of a forest, the space of ground being enclosed with a wooden fence some six feet high. Within this enclosure, such hives as we have described are set in rows, in quincunx fashion, five feet apart. The turf is pared off for two feet from each hive, and the surface strewed with sand, clean moss being placed round the bottom of each. The enclosure, if possible, is selected with a south-east slope. When the time for the honey-harvest has arrived, which must always be early enough to leave the bees time to get a fresh supply for their winter support, a new hive is provided for each colony of bees; and in the evening, when the bees are all at home, the new hive being smeared with honey, the bottoms of both are opened and joined together, and as the hives are all made to a scale and fit close, not a bee can escape. Smoke is then introduced at the top of the old hive, and by this means the bees are driven into the new hive and secured, so as to be set again in their proper standing places. The honey extracted thus is of two qualities; that from the early spring and summer flowers is of a light colour, that from the later flowers is of a darker hue; these two are kept separate, as the darker honey is considered the richest and commands the highest price; the wax is prepared by bleaching, and there is a good demand for it for candles for the churches, &c. Poland, by all accounts, has honey enough for its own people and a great deal to spare. Where it all goes to we have no means of ascertaining, but we do know from our own import statistics that Poland last year received of our people a large sum for honey and wax. Now that the Honey Companies afford a ready market for the honey produce, shall we not compete with and in the end supplant the foreign supply? The book should be on the shelf of every village book club and lending library, and we can promise to all who take an interest in country life both pleasure and profit from its perusal. —D. S.

Foreign.

AMERICA.

At the Convention of the North American Bee-keepers' Society, Mr. James Heddon read the following paper on Reversible Combs:—

My experience with reversing brood and surplus combs is nearly all confined to two seasons; but as I have had in use 4000 to 6000 reversible brood-frames, as well as quite a number of reversible comb-honey-cases, that experience has been somewhat comprehensive. I try to be practical in all my work, never jumping hastily at conclusions, nor adopting methods and fixtures which, although of some little advantage, still are not enough to over-balance the extra cost of construction and manipulation. Despite such endeavours, I realise that it is by no means impossible for me to make mistakes; yet I feel quite positive that implements arranged for reversing brood and surplus combs at will have come to me to stay.

During the past year I have been using a hive which I devised for the purpose, with which I can reverse, or, more properly, invert a whole case of brood or surplus combs at will. While we all here consider this a great improvement over reversing combs singly, yet were I to continue the use of such hives as necessitated reversing each brood-comb separately, I feel positive that I never should again use a frame that would not admit of reversing.

Some of our bee-keepers have paused to ask if there was not some serious objection to inverting combs. They had noticed that the cells were slightly inclined; that the workers nearly always built them in this way; and they believed that behind this almost universal method of comb-construction was a design for a purpose. Even if this be true (which I doubt), is it not quite evident that the designers are not aiming at our desired

end; that they do not purpose 'lots of surplus honey to sell?'

Let us not forget that our bees always and invariably construct their combs so that the cells are in rows horizontally—not vertically. This is an unvarying rule, while the incline of the cells is not. Now I found that, by the use of comb-foundation, I could make them construct their combs with the cells running in rows vertically. Much of Dadant's excellent brood-foundation is stamped in this way. Many believe that it is less inclined to sag when so placed in frames. I have found, by practical use of thousands of pounds of it, that the little worker, in so rigidly following her instinct in rowing the cells horizontally, was only 'just trying to fool somebody.' By the inversion of thousands of combs, I have proven that her less determination to incline her cells belongs in the same catalogue with placing the same in horizontal rows. I think the scientist has long since learned that Nature, when forming instinct in animals, is no more working for our interests than when she pours her rain-water back into the sea, while our crops are blasting and withering; or when she visites us with cyclones.

I know it is true that we cannot with impunity violate some of the instincts of our bees; that some of them run directly parallel with the ends we desire; but which are for, and which against us, we must determine by experiment. I have satisfied myself that in the inversion of combs we violate no instinct which is favourable to our success. We do, however, encourage certain actions on the part of our bees, that greatly favour the desired result.

By virtue of this reversing we get our frames completely and solidly filled with comb, which metes out to us no less than six points of advantage, which I will not consume space to detail. It also tends to keep the brood-combs the more completely filled with brood, the honey going into the surplus combs. When reversing is practised, as we can well afford to do when we can reverse a whole set of combs with a single motion, it gives us great control over swarming. I find that the reversing of the surplus combs, after I have learned the proper time to do it, is conducive of most favourable results. It causes the bees to more completely fill the sections, which is not only an economy, besides presenting a more attractive package, but adds greatly to the shipping-qualities of our surplus comb-honey. It also stimulates hasty and complete capping of the combs.

During my experience in reversing combs, I have never yet discovered any ill effects resulting therefrom; but besides the advantages above enumerated, I am always meeting with unexpected minor benefits resulting from the practice.

Dr. A. B. Mason: When is the proper time to reverse the combs?

James Heddon: The proper time to reverse brood-combs is when the bees are rearing large quantities of brood, and desire to increase the size of the brood-nest. To reverse the brood-combs late in the season, when they are contracting the brood-nest, will cause the brood-nest to be filled with honey all the faster. Sections should be reversed when the bees are inclined to store honey in them; if done after the bees cease storing honey in them, it will hasten the removal of the honey to the brood-nest. As soon as the outside sections are far enough advanced to bear inversion, change them to the centre of the case, then invert the whole case, and all the sections will be finished at nearly the same time. Inversion causes the bees to attach the combs to the sections all around, and thus makes them bear shipment much better. Swarming is also lessened by reversing the combs, as the removal of the honey gives more room for brood, and thus helps to destroy the desire for swarming. It also has a tendency to the destruction of queen-cells.

RUSSIA.

Russian Agriculture and Live Stock.

An important Report has been issued by the American Government on the agriculture in Russia, which has been written by the Consul of that country at St. Petersburg. The facts given have been compiled with great care, the Report consisting of some forty closely printed pages.

Russia is the largest empire in the world, having an area of nearly 335,000 geographical miles, and occupies about one sixth of the land of the globe. It forms a compact mass, whilst our own British Empire, which is the next largest, is scattered over the whole world. Whilst 236,000,000 subjects obey the British, there are not more than 100,000,000 the Russian sceptre.

It is principally in European Russia that the agricultural statistics have been collected. It is found that one quarter of the land is waste, one quarter arable, three eighths forest, and one eighth meadow land. The principal crops are cereals, potatoes, flax, hemp, beet-root, and tobacco. Flax and hemp are grown in Poland only. Cereals occupy by far the largest portion of the arable land—about two thirds. With regard to domestic animals we find that Russia is behind most other European countries. Horse-breeding is widely cultivated in Russia, and is one in which she equals if not excels all European competitors. Without going into all the details we will compare the number of different live stock kept in Russia per 100 of the population with the same proportions in Great Britain:—

	No. per 100 of population in Great Britain and Ireland.	No. per 100 of population in Russia.
Horses	8·37	23·51
Cattle	33·15	33·51
Sheep and goats	105·68	69·97
Pigs	10·70	14·33

The reindeer is an important branch of live stock, and poultry-keeping is universal. Russia consumes millions of eggs yearly, and exports more than 100,000,000. Many millions of head of poultry are annually consumed, yet Russia exports 1,000,000 head every year. Bee-keeping is also extensively practised, more than 1,000,000 roubles' worth of wax being every year produced for church purposes alone.

How Bees Predict the Weather.—No. 17 of *Die Natur* contains an article by Herr Emmerig, of Lauingen, on German bees as storm-warners. From numerous observations the writer advances tentatively the theory that, on the approach of thunderstorms, bees, otherwise gentle and harmless, become excited and exceedingly irritable, and will at once attack any one—even their usual attendant—approaching their hives. A succession of instances are given in which the barometer and hygrometer foretold a storm, the bees remaining quiet, and no storm occurred; or the instruments gave no intimation of a storm, but the bees for hours before were irritable and the storm came. He concludes, therefore, that the conduct of bees is a trustworthy indication whether a storm is impending over a certain district or not; and that, whatever the appearances, if bees are still, one need not fear a storm.

Dame Margaret's Bees.—Margaret, the widow of John Norton, made her will on April 24th, 1506. She desired to be buried in the tomb of her late husband. She left six silver spoons to her grandson, Christopher Norton, and desired that her son William should find a priest to sing for her for a year. She left 12*d.* to Sir Thomas Oglethorpe, the curate of Bilbrough; her primer

and books of prayer to her daughter, Joan Nelson, and 3*s.* 4*d.* to each of the children of her son William, to whom she bequeathed the residue of her property. Finally, she left all her bees towards keeping up a light in the chapel of Bilbrough Church as long as it shall please God to preserve them.—*From 'Life of Admiral Robert Fairfax,' by C. R. Markham*, page 264.

The *New Zealand and Australian Bee Journal* has ceased to exist. At the end of the second volume it has has been incorporated with the *New Zealand Farmer, Bee and Poultry Journal*. Although the new journal did good service and increased the number of members it never paid its way, and for this reason had to be given up.

Echoes from the Hives.

Bishops Waltham, Hants, Jan. 8th.—The weather in this district during the past month or six weeks has been rather variable, sometimes intensely cold, and again quite mild; but on the whole it has been a favourable time for the bees. All my hives seem quite strong and fly well on fit days. I heartily wish the *Journal* every success in the onward stride it has just commenced, and I am sure that many others with me look forward to getting their *Journal* every week with very great pleasure: to me it has during the past year been of very great service; and I know from my short experience that bee-keepers will find a great deal of advice in it which it will well pay them to follow.—H. W. West, *Hon. Sec. Swanmore Bee-keepers Society.*

Doncaster, January 9.—I am very pleased to receive the first number of the weekly *B. B. J.*, and I may say I have always looked forward to the dates when it would come. I always immediately jump into the middle of 'Useful Hints,' and unlike Mr. Godfrey I *do* wish to be greedy and cry for *more* and *more*, they will now be so much more useful, coming so frequently. I had more success last year with extracted honey than section, and easily sold it after taking some prizes. I have also sold all I can extract during the coming year.—North Lincoln.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

T. A.—While in our past numbers there are numerous directions for making Observatory Hives, there are none for the special ones desired by you.

W. T. Joyce.—If you are disposed to bind the advertisements with the literary matter, the cases will comfortably include both.

F. F. McK.—*Dead Bees.*—It is the old bees that have died and have not been carried outside the hive on account of the cold. Bees frequently carry their bees out and leave them in the space if there is access to it. It is better to have a tunnel communication with the porch if you wish to have a division-board in front.—Thank you for your suggestion; we always try to carry it out as far as practicable; but it is not always possible to squeeze in all the literary matter without sometimes encroaching on the advertisement space. With a more frequent issue we shall be able better to carry out your suggestions.

C. J. H. Fitch.—*Reducing Propolisation.*—We reduce propolising to a minimum by using 'Novice's' metal corners, described and illustrated on page 33 of Cowan's *Bee Keepers' Guide Book*. Propolis is easily removed from the hand with methylated spirits of wine.

Erratum.—In No. [1], page 5, 6th line of reply, *for* hive *read* time.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent Street, London, W.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent Street, London, W.

FOREIGN BEES.

Benton, F., Munich, Germany.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 12-16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

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Edited by Thomas G. Newman, at 925 West Madison Street, Chicago, Illinois, U.S.A., sent to European Subscribers at 6*s.* 6*d.* per annum, including Postage. The money may be sent by International Postal Money Orders on Chicago. London Agents: Messrs. Geo. Neighbour & Sons, 149 Regent Street, W.

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Fit any description of Frame. Can be used with METAL ENDS, otherwise perfectly take the place of same; no alteration in size, with perfect reversibility of Frame, **2s.** per doz. FRAMES with ENDS, **5s. 6d.** per doz., fitted.

W. B. WEBSTER, Wokingham, Berks.
(4815)

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, w.c.

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Editorial, Notices, &c.

SWARMING ACCORDING TO THE VIGNOLE SYSTEM.

It is usually said that swarms are got at the expense of honey, and if we get honey we must not expect swarms. The one is incompatible with the other. M. Vignole, however, who is one of the advanced bee-keepers of France, and President of the 'Société d'Apiculture de l'Aube,' says that this maxim is simply an error, and is the logical result of imperfect methods applied without science.

As M. Vignole's system has never been described in the columns of our *Journal*, we think this is a fitting opportunity to give such details as may enable our readers to form an idea of the theory, and, if they are inclined to do so, to experiment upon it.

M. Vignole starts with the axiom that the reproduction of bees must take place by means of swarming without detriment to the amount of honey produced. It is well known that, as a rule, bees do not begin to swarm until honey is being collected in plentiful quantities; it is also about this time that stocks are ready for artificial swarming, as usually practised. In opposition to this method, he proposes what he calls, '*anticipated swarming with multiplied permutation of hives*, based on rational principles.'

To prosper in bee-keeping it is necessary to have strong colonies; all are agreed on this point, because early swarms are always good and late ones are generally weak and valueless. If the populations developed by feeding in spring are more forward, they are also much stronger; they give stronger and better swarms. It is true this induces earlier swarming, but natural swarming cannot take place without the multiplication of drones, which must be avoided. As it is admitted that a large number of drones reduce the honey-harvest, we must not wait for natural swarming, but adopt a method which prevents in a great measure their development. The Vignole method effects this object. But this is not all. If it is necessary that artificial swarming should be performed early to be good, it is also important that the parent stocks which have had swarms taken from them should remain strong, so as to be able to store much honey, and also that after-swarms should be limited so as not to weaken the hive. Strong hives are wanted not only in the spring but during the whole gathering season,—and also for wintering. To keep up this strength it is necessary to encourage the multiplication of our bees; and nothing effects this object better than swarming. The following are the laws upon which this system is based:—

1. To be strong the swarm must be made early.
2. To prevent the weakening of the hive which produced it.
3. To establish its strength by removing the cause of its weakening.
4. To prevent the raising of drones.
5. To limit the number of swarms.
6. Only to operate on hives well provided with brood.
7. To develope the laying powers of the queen.

Having given an idea of the system, we will now explain how M. Vignole carries it out in practice. He states that the swarming must be anticipated, and that it must be performed before queen-cells are started, which is always coincident with the great development of drone brood.

SWARMING THE PARENT STOCK.

This must be done, as we have stated above, before queen-cells are formed. All hives are not ready at the same time, but operations must commence with those that are in a fit condition. Examine the strongest hive, and if it is filled with bees and brood this is the time to make the swarm. Do not wait for drones, as the hive could not be in a better condition for swarming, according to this plan. Make your artificial swarm by driving, or otherwise, and place it upon the stand of the parent stock, which has to be removed and put in the place of another hive, equally strong. The swarm is then supered. The hive which has given its place to the parent stock is put on a fresh stand, at some distance from its original position. Thirteen days after, the parent stock will be strong enough to give a second swarm, equally as good as the first. He gives thirteen days, and states it is because the youngest larva that the bees can select to raise a queen from is hatched from an egg laid three days; consequently, these added to the thirteen days give the normal time of about sixteen days for the metamorphoses of the queen. If the parent stock is supered, the super is removed and a second swarm made. This time the swarm again takes the place of the parent, which in turn takes the place of the one removed to a distance,—which, in its turn, is again displaced. Eight days later, *i.e.* twenty-one days after the first swarm was taken, when there is no longer any brood in the hive which has given the two swarms, all the bees are driven out and the hive is removed, its work being accomplished. The driven bees take its place until they can be utilised in the way to be explained.

In this way, the parent stock, at the moment when it had a chance of becoming queenless, after the second swarm (as frequently happens in natural swarming), is saved from this danger. It also being free from brood,

and all other substances but honey, gives a more sure return, and renders the manipulation easier. It must be borne in mind that, when the first swarm was taken, the parent stock was left queenless; which, according to this system, is an advantage, because the bees, not having any fresh larvæ to look after, can devote all their energies to collecting and storing honey in the cells which would otherwise be occupied with brood. There being also very few or no drones, the honey they would have consumed is a gain to the bee-keeper.

Let us now look at our swarm. Its future prosperity has been secured. Already well peopled, it is considerably strengthened by the bees returning laden from the fields. Not the least of the advantages claimed for this method is that of being able to leave the hives to themselves for twelve days, and return on the thirteenth with the certainty of being able to make the second swarm.

This system of swarming can be continued as long as the honey flow lasts; and in places where it is of long duration, the first swarms can even have a swarm taken from them, always practising the permutation of the hives.

Displacement of Hives.

In this system, the displacement of hives presents great advantages, and is a sure method of preventing natural swarming. The displaced hive, momentarily impoverished by the loss of a large portion of its population, feels the necessity of strengthening itself and sets to work to rear worker-brood just at the time it would ordinarily be employed in rearing drones, which in this case is prevented. These hives are always the strongest in the following season, and are well furnished with stores, and should be kept for building up the apiary.

If the honey-harvest is abundant, the second swarm can be treated in the same way as we have described for the parent stock, always bearing in mind to place the swarm on the stand of the hive from which it is taken. A hive that has been displaced must always be allowed to re-establish itself, and should never be swarmed before the hives which it has fortified.

The continuance of the honey-flow has a tendency to make the first swarms which have become very strong to swarm again; the hives which take their place prevent this, and the swarm is rescued. In this manner the permutation of hives, with judgment, strengthens the exhausted hives and prevents natural swarming.

So also the first swarms, being forced before the great flow of honey, and the second swarms thirteen days after, and in the midst of it, have as good a chance of success as, or better than, most natural first swarms.

Driven Bees.

The driven bees, which result from this system of taking away the parent stock that has given two swarms, for the purpose of appropriating its honey, left to themselves, would not prosper. Sometimes, it is true, they could build some combs, but they are much more usefully used in strengthening weak swarms, or, by uniting several together, building up stocks.

In working this system, it is stated that not only is the amount of honey collected not diminished, as in the ordinary swarming, but that it is increased, because there are few drones to feed; and that an increase of the population is made without the desire to swarm being created. The system can be applied as well to moveable comb-hives as to any other. Although the bees cannot be driven in moveable comb-hives, swarms may be made by removing the queen, with a couple of frames of brood, placing these into an empty hive, and brushing enough bees to make the swarm. The hive is then placed where the parent stock stood, and this is removed just as we have described above. One thing to remember is, that a super or rack of sections be put on the swarm when it is made, so that it can at once commence storing honey. The renewing of queens can also be accomplished by taking those first swarms having aged and defective ones, and preserving those with young ones.

To sum up, the advantages claimed for this system are that,—

1. The swarming is done on fixed days.
2. The number of swarms is limited.
3. The parent stocks are strengthened by permutation, and are harvested at certain periods determined by the bee-keeper.
4. The queen lays worker-eggs in the swarm, instead of drone-eggs in the parent stock, at the time of the honey-flow.
5. The drones, the raising of which is lessened, or entirely prevented, cannot interfere with the workers or rob their stores.
6. The parent stocks which have given the swarms are the heaviest in the apiary.
7. The strength of the apiary is kept up by swarming.
8. Queenlessness is unknown.
9. The bee-keepers' time is economised.

Such are the advantages claimed, and we have no doubt that, in the hands of an expert like M. Vignole, the results are satisfactory; but it seems to us that our hives are generally much too heavy to be constantly moved about in this manner. Dr. Bianchetti, of Ornavasso, and others, are enthusiastic about it; but their hives are certainly much smaller than ours. We hope some of our bee-keepers, especially those nsing skeps, will try it, and give us the result of their experience. To carry it out properly, it is necessary to follow the instructions given faithfully. We entirely agree with M. Vignole in the necessity of having strong colonies, and these we succeed in getting without having recourse to swarming, which in our large hives we entirely prevent, and at the same time encourage the full development of the laying powers of the queen. We also prefer to raise our queens by careful selection, and thus insure their good qualities being perpetuated.

USEFUL HINTS.

Weather.—The opening sentences of our last 'Hints' (January 7th) apply exactly to present circumstances—'after severe frosts and snowstorms, again we have a sudden thaw.' The latter snowfall, however, has been much heavier than the former, and many hives have been buried beneath the banks of snow. Where the snow has been removed in its crisp state, and carefully brushed from the hives and entrances, the hives will remain dry and unaffected by the pouring rain, which is fast removing the white mantle from our fields.

Flights.—For nearly a month have our bees been confined to their hives without the chance of a flight. Consequently, on the first mild day, all strong colonies will rush forth from their hives as if on swarming bent; but, in fact, for a very different purpose, namely, that of cleanliness—to avoid fouling their hives by the voidance of feces. Wherever dysenteric symptoms exist they will then become manifest by the soiled alighting boards and fronts of the hives.

Dysentery.—Now although *perfect repose* at this season is most desirable for healthy colonies, yet there are exceptions to all rules, and fully-developed dysentery is one, to which, immediately the weather permits, a remedy should be applied.—See last 'Hints,' p. 3.

Sealed Combs. Food.—If frames of sealed honey, ungranulated, are in store, we prefer such—given

warm, with a few cells unsealed—to any other food. We always store, in a dry, warm room, a number of such combs as a reserve, when making our winter preparations, in preference to extracting the whole: and the life of many a colony has been saved by these means.

Indeed in *every case*, where food is required in winter, or early spring, there is none equal to this, especially if the bees are confined to the combs they can cover. To colonies in skeps, food cannot be given in this form, but may be supplied as suggested in former 'Hints.' As a rough measure of the consumption of food, it may be considered that a strong colony will consume about fifteen pounds of honey between September and March; but from March to swarming time the consumption is very great, and this at a period when very little honey is coming in, especially in cold and late springs. Hence the necessity of liberal feeding at such times.

Damp Hives.—Another case in which examination at this early season is allowable, is where hives have been saturated by the admission of rain, or melting snow, through faulty roofs or coverings: or where the driving snow has penetrated to the interior through the entrance.

Transferring.—In either case a transfer of combs and bees to dry, clean hives, is most desirable; and clean floor-boards, with dry quilts, must be substituted for wet and soiled ones.

During the never-to-be-forgotten snow-storm of January 18th, 1881, the interiors of some dozen of our hives were so penetrated by the finely-powdered snow, driven through the entrances, and firmly wedged in between the combs to their very centres, that we were compelled to take them in-doors, and, manipulating by lamplight, to clear the combs from snow, and to transfer them, bees and all, to dry hives. This was accomplished with the least possible disturbance to the bees;—most of the queens were 'interviewed': in most of the hives sheets of sealed brood were found: and the final result was perfectly satisfactory, all these colonies affording a good return in the summer following. Indeed, no injury, but much benefit, resulted from this unseasonable manipulation.

Provision for the Future.—Again we remind our readers of the economy of providing, so far as practicable, for future requirements. Of course, no bee-keeper can decide, so far in advance of the season, as to what the season will be—whether prolific of swarms or honey, or of both, or neither—hence he will be chary of ordering goods which he may never require. Nevertheless, those who are wanting hives, racks, crates, sections, &c., in store, will be wise to make reasonable provision *now*, when the warehouses of those who cater for the fraternity, in the supply of all things necessary for the craft, are already full to overflowing. Procrastination may prove an expensive indulgence, and required articles—as we know by experience—may be unobtainable at the precise time they are wanted.

Things-in-General.—When casting about for 'Hints' to our readers—whom we cannot resist comparing to the 'two daughters of the horseleech,' continually crying 'Give, give,' however flattering to ourselves—so many ideas, which can scarcely be classed under the category of 'useful,' cross the mind, that we shall not hesitate in future to conclude this department of our labours with the above comprehensive heading.

And first, as regards reversible frames. In our issue of the 7th instant, Mr. Hooker reverts to this subject: referring to Mr. Heddon's favourable report, after practical experience (related in a paper, which we were pleased to see transferred *in extenso* to our columns), and very much to the point indeed: he might also have added that Mr. Heddon had on his hands upwards of ten tons of honey, which he was unable to sell, obtained from the 6000 reversible frames.

This, however, is no argument, since an equal, or larger, quantity has repeatedly been obtained from unreversible frames. Mr. Heddon is the *one* strenuous advocate of the system, which, assuredly, after a trial of five or six years, has not been taken up generally by prominent American apiarists. The articles on this subject in our columns can hardly be said to have been written with the intention of 'throwing cold water on the system'—nor are they entirely 'theoretical.' The summing up, certainly was not favourable to the system; but it was evidently the desire of the writer of those articles that the advocates on both sides should have a fair field and no favour. The system has yet, in a great measure, to be tried in this country, and we trust that many of our apiarists are preparing to give it a fair trial. As a specimen of special pleading Mr. Heddon's paper is clever, but we must join issue with him as regards the statement that, 'the upward incline of the honey-cell is not unvarying.' We have always found it so. Granted that the cells in the *brood-nest* are horizontal, we maintain that the cells around and above the nest, as a rule, have always the upward pitch, and this in so much the greater degree, as they become more and more lengthened for the reception of additional honey. And thus the cells *over* the brood-nest—often prolonged until the combs all but meet—form a heat-retaining canopy above the nest. To reverse all this appears to us so contrary to the natural instinct of the bee, that we must, in accordance with the dictates of common sense, adhere to the belief that by judiciously uncapping portions of the sealed honey, thus causing it to be removed to a higher level (*i.e.* into the supers), at least an equally favourable result may be obtained, without the great disturbance caused to the colony by the inversion of all its combs. Under certain circumstances, however, we can conceive the inversion of skeps to be advantageous.

Formic Acid—A Remedy for Rheumatism.—*El Siglo Medico* relates the following singular case, which may prove interesting to the bee-keeping world:—'A woman had suffered so much from rheumatism that for six months she had hardly slept. Her right arm was so affected that it was quite useless; she could neither work with it, nor dress herself. While in this state she heard of a countryman who suffered in the same way, and who

had been cured by the accidental sting of a bee. As the pain caused by the sting could not be worse than that due to the rheumatism she determined to try the same remedy. Three bees were obtained and made to sting her on the right arm. The success of the treatment was surprising and complete. On the following night she was able to sleep, and the acute pain had all but completely disappeared; the arm was naturally a good deal swollen, owing to the stings, but the swelling quickly disappeared with cold water dressing. The use of the arm gradually returned, and since there have been no symptoms of rheumatism. It is reported that the same remedy has been equally successful in several other cases. The cure, no doubt, was caused by counter-irritation, and the treatment is analogous in its action to blistering, and the like.' Moral: 'Let all rheumatic persons keep Cyprian bees.'

Beware of the BLUE-TIT. He is very busy in our apiary. For him we are preparing traps baited with linseed—a never-failing inducement to him to enter.

BEE-HOUSES.

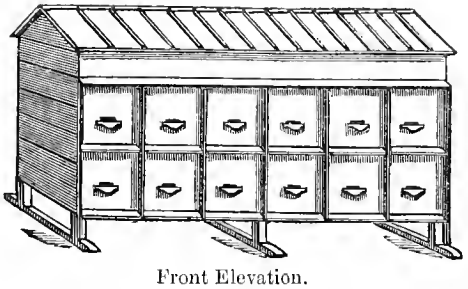
Having frequently been desired by some of our readers to give illustrations of bee-houses, we have much pleasure, through the kindness of the Rev. Geo. Raynor, in complying with these requests.

The advantages or disadvantages of bee-houses have ever been a 'vexed question' with bee-keepers; for while some of our most practical apiarians have been strongly opposed to their use, others are equally in favour of them. We are not disposed to discuss this matter at the present time. It has been exhaustively dealt with by Mr. Raynor in the paper read by him before the B. B. K. A.; and we would recommend our readers to procure this paper and study it, with the discussion that followed its reading. Mr. A. I. Root, in his *A B C of Bee Culture*, notes many 'good and desirable qualities' in bee-houses—or house-apiaries, as he terms them—and advocates their use.

To assist those of our readers who may desire to make their own bee-houses, we subjoin the specification which accompanied the drawings.

SPECIFICATION OF BEE-HOUSE.

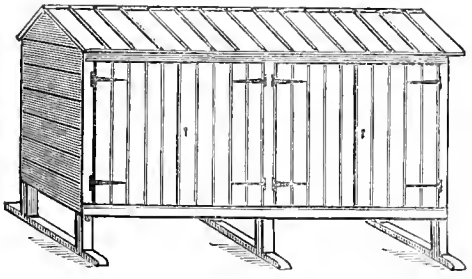
Properly frame, and fix together with mortice and tenons, the bottom, side, and end rails into upright posts, also cross bearers; and fix upon same inch pine floor, properly jointed together.



Front Elevation.

Fix bearers on ends; also brackets at equal distances, and fix inch pine boards on same to form middle floor.

Provide and fix cross pieces, to project at least three inches at each end beyond legs to support same.



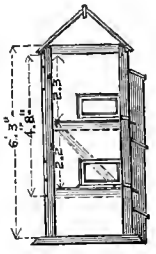
Back Elevation.

The ends and front of house to be covered with three-quarter inch matched boards.

Provide and hang at back two pairs three-quarter inch ledged, tongued, and beaded doors, with cross garnett hinges, two bolts, two locks for fastenings.

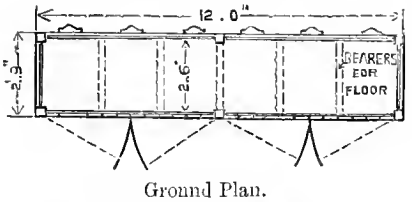
Provide and fix seven inch boards, as shown on front of house to divide entrances. Cut entrance ways, and fix alighting-boards and robber-slides to same.

Framed roof-plates to upright posts, and supports where necessary to prevent sagging; and cover roof with three-quarter inch square-jointed boarding, and fix chamfered fillets over same.



Section.

Paint the whole of the wood and ironwork three coats of good oil-colour of approved tint.



Ground Plan.

Scantling of Timber, &c.—Corner and middle posts, 3″ × 3″; bottom and end rails, 1½″ × 3″; cross-bearers, 1½″ × 3″; roof-plates, 1½″ × 3″; ridge, 1¼″ × 4″; fillets for roof-boards, ½″ × 2″; entrances, ½″ × 4″; alighting-boards, 3″ × 8″ × inch thick; cross pieces for legs, 3″ × 3″. The legs should be of pitch pine or oak.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

As we go to press the election of the Committee for the present year is proceeding. The voting papers have been issued, and doubtless many of the members have already recorded their votes.

The list contains the names of many who have done the Association and the bee-keeping cause good service in the past, and who, if elected, will no doubt continue their work and labour of love as hitherto.

In addition to the members of the old Committee we are glad to see such names as the Rev. F. T. Scott, who was formerly a member of the Committee; the Rev. J. Lingen Seager, Hon. Sec. of the Hertfordshire Association; and Mr. A. H. Heath, Hon. Sec. of the Staffordshire Association.

It is very desirable that a good strong Working Committee should be elected, consisting of those who

can and will attend the various meetings of the Association. The Association's work has considerably increased during the last few years, and it is only just that every member who may be elected should consider himself in duty bound to carry out the work which the office entails.

THE BERKSHIRE BEE-KEEPERS' ASSOCIATION.

The annual meeting of this Association was held on Tuesday last, January 12th, at the Queen's Hotel, Reading, A. Sutton, Esq., in the chair; there was a good attendance of members. The report and balance-sheet were read, adopted, and ordered to be printed. The Expert's report we hope to publish shortly, as it contains some useful suggestions respecting spring feeding. The finances of the Association appear to be in a flourishing condition, and the increasing list of members shows that good progress is being made in Berkshire. The officers for 1886 are as follows:—Hon. Sec., Mr. John Bowly, Avenue Villa, South Eastern Avenue, Reading. Assistant Secretary and Expert, Mr. A. D. Woodley, 26 Donnington Road, Reading. Hon. Treasurer, John Simonds, Esq., The Bank, Reading. Hon. Librarian, Mr. F. Cooksey, 131 Friar Street, Reading; and a representative working Committee. It is pleasing to note that the second and third prizes in the Bligh Competition were awarded to members of this Association (Mr. W. Woodley, World's End, Newbury, and Mr. F. Woodley, Chilton Steventon, Berks), and first and second prizes for large supers at the Royal Agricultural Show at Preston, besides many others, reached the county, showing that Berks is by no means behindhand in the bee-keeping world.

It is hoped that the annual show of this Association will be held at Reading this year, and efforts are being made which it is hoped will make it even more successful than the one held there in 1884.

Selected Queries.

[43.]—*What is the best method of preventing bees from robbing?*

Keep all your hives strong. Be careful not to leave any honey or syrup about, especially in spring and autumn. If robbing does take place, contract the entrances of the hives, so that only one bee can pass through at a time, and by this means the hives are easily guarded.—Geo. Walker.

Shut up hive being robbed, allow ventilation, and remove two or more miles away after dusk.—R. McNally.

'Prevention is better than cure.' Leave no sweets lying about in any shape. During a dearth of honey open weak colonies and nuclei as seldom as possible, and none at all except early morning and at evening; the former at evening only, at such times. In cases of actual and determined robbing, contract entrance to quarter inch, and use watering-can freely to repel the intruders.—Samuel Simmins.

Keep all stocks strong; it is *the one* preventative against any attempts by marauders. It is at the close of the honey season when most danger exists from robber bees, therefore at such time especially closely examine all hives, and see there be no crevice by which it would be possible for a bee to gain entrance save by the front door, and that should be narrowed. Stocks that are weak from over-swarming or other causes are those generally attacked, and most easily overcome. The entrances to such should be closed to within two inches, and a piece of fine perforated zinc, having a small aperture to admit two bees only to pass, fixed at opening, and the stocks carefully watched. Robber bees may very easily be spotted by their cautious dodging about close round and at entrance to hive, bent as they are on slipping in for plunder at any unguarded moment. Immediately on discovery of a stock being assailed, close hive, and let it remain so until near dusk, when reopen, that the robbers may clear out. In the meantime examine apiary, and if found that the guilty ones are home residents close their hive also until near dusk, then reopen it to admit returning bees. At the same time remove quilts, and uncap cells of two or three frames near top. When all is quiet, close entrance again, and let it remain so until next evening, then allow bees flight. Follow the same treatment for three or four days. Examine robbed stock, and if found worth preserving replenish their store so far as needed. Should, however, the robbers have come from abroad, keep entrance of robbed ones closed during daytime for three or four days. Perforated zinc should be used when closing entrances.—R. R. Godfrey.

The plan I have found most effective, if practised when robbing commences, is to place a tunnel four inches long with half-inch entrance on the alighting-board, through which only give the bees access to the hive. I then paint the hive front and the alighting-board from side to side at their junction with carbolic acid.—C. N. White.

Keep your stocks strong, and take care that none are queenless. Do not give them more combs than they can well cover, and keep the entrances narrow in spring and autumn or whenever the honey flow is checked. Feed during the night only and spill neither honey nor syrup in the vicinity of the apiary, nor let the bees clean any combs outside their hives. Perform all operations on the stocks as quickly as possible and let all slinging of combs be done indoors.—F. Zehetmayr.

Have all colonies strong and able to defend themselves. Keep each hive supplied with a young queen (not over two years old). Avoid opening hives in the middle of the day in robbing season (early spring or autumn), and be especially careful not to spill any syrup or leave honey exposed. In fact, to be very cleanly in your manipulation and not to drop comb paring or other attraction on the ground. When bees have begun to rob they may be induced to desist by hanging a wet cloth or an old sack over the hive attacked, and sprinkle a little carbolic acid on the cloth not far from the entrance.—Alfred Neighbour.

[44.]—*How many frames of comb should be left for bees to winter upon, and how much honey or syrup?*

Ten to twelve in autumn, reducing number in early spring to suit strength of colony. From twenty-five to thirty-five pounds of honey or syrup.—R. McNally.

Seven to nine, according to strength of a colony, each of said combs respectively to contain not less than four pounds gross weight; or to be three-fourths sealed over by Oct. 1.—S. Simmins.

This depends upon the size of the colony. Four pounds of bees—about 18,560 in number—may be crowded upon eight standard frames. The eight frames should contain about twenty pounds of sealed honey or syrup, the former for preference.—George Raynor.

A stock which has crowded from ten to twelve combs, and worked well into supers besides during the summer, may generally be compressed into the space occupied by seven or eight combs for winter. These combs should have a border of honey weighing collectively from twenty to twenty-five pounds, and with suitable wrappings and properly arranged ventilation bees so provided will winter safely.—P. H. Phillips.

The number of frames of comb left for the bees to winter upon should be *only* the number the bees can cluster between; and the bees' combs and food should

weigh twenty-two pounds nett in September. My bees have consumed on an average for the last thirty years nine-tenths of an ounce per day per stock from September to April. Some stocks consumed nearly double that others did. Weak stocks consume the most, as they have to eat more food to make the necessary heat, instead of keeping themselves warm in large clusters.—WILLIAM CARR.

Five to seven. Twenty to twenty-five pounds.—C. TITE.

The number will entirely depend on the strength of the colony at the time you prepare it for winter. The frames of comb should be reduced until those left are crowded to overflowing with bees, care being taken to leave those having a good quantity of honey, and all with brood, should there be any. They should have from 15 lbs. to 20 lbs. of honey or syrup to winter upon. It is advisable to make winter passages through each comb, two inches down from the top of the frame, about in the centre, to enable the bees to pass from one comb to another without leaving touch with the cluster.—JOHN M. HOOKER.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

WAX PRODUCTION.

[45.] Seeing what a large amount of money we are paying annually for wax imported into this country, it is not surprising to find the Editor of the *British Bee Journal* endeavouring to impress upon the minds of British bee-keepers the desirability of raising more of that article at home. But if we follow the advice given by most advanced bee-keepers, and use full sheets of comb foundation, both in body, box, and supers, I fail to see how the desired increased production of wax is to be brought about.

The cost of foundation for use in my own apiary is considerably in advance of amount realised through the sale of wax. For instance, I purchase stock foundation at 2*s.* per lb., a pound of which will fill six Standard frames. But when I melt down six combs, no matter whether they have been used three months or three years, I am quite unable to get from same one pound of wax, and what I do get, although of the finest quality, will only fetch 1*s.* 6*d.* per lb. I consider, therefore, that I lose at least 9*d.* per lb. by every pound of wax I sell, that is, so far as the wax itself is concerned. I am fully aware of the great advantage to be derived from the use of comb-foundation, under certain conditions, but the system of using full sheets at all times and under all circumstances is, I think, open to objection, especially in the case of swarms. Natural swarming generally commences, in this district, in the early part of May, but the warm weather which is sufficient to bring about this (to many) desirable state of things is, as a rule, followed with a period of bitterly cold weather which often extends over several weeks. Swarms that are hived on full sheets of foundation of course very rapidly fill their hives with combs, and then have nothing further to do during inclement weather but to prepare for swarming upon the very first hot day that suddenly occurs. And I am very much inclined to the belief that if, for these early swarms, strips instead of full sheets of foundation were used, the bees regularly fed so as to keep them busy comb-building as well as breeding, such swarms would, by the commencement of the regular honey season, be in equally as good, if not better, condition than those that have been furnished with full sheets of foundation; at all events, I intend trying it, and if my theory proves practicable, I may then think of enlarging my apiary for the purpose of wax production. The probability is, of course, that I shall get a larger proportion of drone-comb, but such combs make capital honey receptacles and could be weeded out at the end of the honey season, when they would, I presume, produce about the same quantity of wax as worker-combs, and whatever the production might be, all would be clear profit, there being no cost of foundation to deduct.

If you think the above worthy of publication, I shall be pleased to see it in your next issue, and will then give you a letter on 'Foundation for Supers.'—A. SHARP, *The Apiary, Huntingdon.*

'TEN YEARS SINCE.'

[46.] It is about ten years since I intruded upon the pages of the *B. B. Journal*, not that I have felt any lack of interest in its contents, for they have always been full of suggestions that have been generally pleasing and profitable to me. I have indeed sometimes been furbishing my spear when I feared one of my brother apiarians was verging dangerously near to apicultural heterodoxy; but while preparing for the contest, some one, more prompt and agile, has entered the field and defended the truth as it is in modern apiculture, leaving me to the conclusion that reticence was for me the better part of valour. But probably you will allow me, Sir, to express my gratification that in so many matters your large experience has sustained my judgment and justified my practice. I, with yourself, ever since my early noviciate, have discarded distance-tacks, &c., trusting to the eye and the feel to adjust the frames to their proper distances, nor care to be encumbered with gloves; and, having no taste for smoking myself, I credit my bees with like good sense, so never use smoke except a little in driving bees from skeps, and have frequently taken out every frame from all my hives without a bee attempting to sting, judging that quiet, care, and patience will be less likely to irritate than smoke. I was also pleased to find your experience rendered it probable that the enamel cloth would be found preferable to other materials for covering the frames. I have seen fourteen stocks covered with it next the frames, and when examining them last month saw no reason to fear injury from its use. Indeed, I have long been sceptical as to the wisdom of the upward ventilation, for how can it be secured without loss of heat? And is not loss of heat, and increased consumption of food to replace it, a prolific cause of dysentery, sometimes resulting in foul brood? And for what object? Is it to let off the gases that would poison if confined? If so, what poison? Is it carbonic acid gas that is the principal danger? If so, is not that gas in specific gravity half as heavy again as the purer air of the hives, and will it not tend rather to sink than to ascend and flow out at the entrances, especially if left fairly open, as you recommend? And if the object be the removal of moisture, will not an adjustment and equilibrium of the internal and external moisture of the atmosphere be brought about by a process somewhat analogous to endosmose and exosmose, which takes place in the circulation of fluids of different densities and specific gravity in plants? And if an upward flow of the atmosphere of the hive takes place, however slow and indirect, must it not carry heat with it from the upper part of the hive,

and thereby suck the cold air in to replace it, and so produce the evil so much deplored—the condensation of the moisture within upon all parts made cool thereby? And if increased cold occasions increased consumption of food, and increased consumption of food increased moisture, and if the bees are confined, tends to cause diarrhœa and abdominal distention, with all its attendant evils, are we not then, by upward ventilation, imperilling the interests of the bees and bringing about the very evils we seek to prevent, and antagonising the instincts of the bees, which prompt them to propolise the insides of skeps, the perforated zinc over feeding-holes, and all coverings of whatever material, if sufficiently porous to admit of upward ventilation, if they can get any? And does not the fact that they do so little in the way of propolising the enamel cloth prove that it suits better their comfort than upward ventilation? And, again, if a certain degree of warm moisture is required for the production of healthy brood, and I have found repeatedly in my hives, both in December and January, brood in several frames, then why should we get rid of it from the top of the hives? Will it not, if in excess, escape from the bottom of the hive without a proportionate loss of heat and a consequence drawing in of a colder and heavier air from below? And if the bees are crowded, as you, Sir, recommend, on a few frames, and these surrounded by dummies and winter packing, will it not serve all the requirements of the bees, and render our bar-frame hives more like the skeps, propolised as they are, preventing upward ventilation, and yet remaining, if well covered and sufficient bees, dry enough for a safe wintering?

Or if any prefer the plan I have adopted for years, that of having three and sometimes four entrances in the floor-board of the hive, so that when I take condemned bees, instead of having additional hives to contain them by means of additional dummies, and the opening of additional entrances, you can crowd three or four stocks under one roof, then should you think it expedient to unite them if they do not happen to prosper or are queenless, it is only to withdraw a dummy, then two are united without further trouble, the scent generally being sufficiently mixed to prevent any fighting, and they that add additional heat to the advantage of all; and additional dummies may be cheaply extemporised by procuring cardboard from the drapers, which, if tacked on the side of a frame containing comb, and cut to fit, will suit either between the stocks, or to enable to fill in with chaff for winter packing. My entrances are all in the floor-boards, which I prefer, and the hives made long enough to contain two stocks in the summer; then, if all goes well, make hives enough to contain them, with room to work. Should any reply in reference to upward ventilation, that the packing above is enough to prevent the loss of heat, then does not that likewise defeat the professed intention of upward ventilation, and retain all the moisture?

I leave these queries for the consideration of apiarians more profoundly versed in scientific subjects than myself.

Perhaps you will allow me to express a fear that we are allowing one of the most interesting parts connected with bee manipulation to fall into disuse at our bee shows, I mean slinging the honey. In the first volume of the *B. B. Journal*, under the signature 'Alpha,' page 72, I mentioned my practice of using fine annealed wire for confining transferred comb into bar-frames. I have continued it ever since, finding it answer well when twisted and drawn a little aslant to tighten it. I object to tape, as recommended and used, as it is so often gnawed by the bees, and if left a few days a channel is made under it, showing that the bees seek to get rid of it, or find it in their way. And while foundation is a valuable acquisition to the bee-master, it is in my judgment poor economy to throw away good comb to substitute comb-foundation when one is transferring. I use a small strip of a hat-box to prevent the wire from cutting through the bottom of the comb when too short to reach the bottom rail of the frame.

There is one other matter that I should like to be enlightened upon. I have often wondered who was the first person to use the honey-slinger in England. I sent to the *Bee Journal* in July, as I thought time enough for insertion in the August number of 1873, an account of my use of it, under the name of 'Alpha.' In the August number my friend and tutor in apiculture, Mr. Abbott, gave his account of having used the one he had received from America. My account was inserted in the September number. I must leave it with my friend, Mr. Abbott, to decide as to which tried his hand at slinging honey first in this little island, unless someone else lays claim to priority.

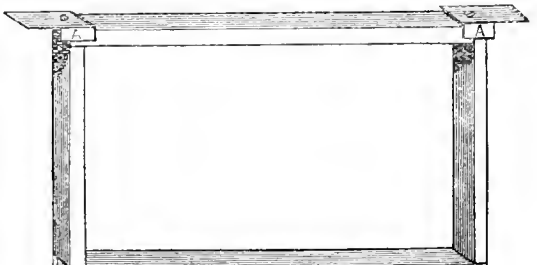
Now, Sir, asking absolution for the length of my epistle, and wishing you every success in your office as Editor, which your large practical experience and success lead all to anticipate.—D. W. Pennell, *Nitcham, Swaffham, Norfolk, Jan.* 16, 1886.

BEST HIVE.

[47.] A discussion on the merits of the different hives in use now would be most seasonable, and valuable information should be gained by it, for I feel that I have not the best hive, nor, perhaps, the best way of managing it, when I find so much more honey taken by others per hive than I can. Is the hive of the future to be a long twenty-framer, or ten-frame boxes be built up one over the other, or a hive to be in one position to-day, to be turned upside down to-morrow? Hoping some of our advanced bee-keepers will give their opinions, I am sure much useful information would result.—John J. Smyth, *Ballinacara, Co. Cork, January 11th.*

REVERSIBLE FRAMES WITH METAL ENDS.

[48.] Whatever improvements are made in frames metal ends will be looked upon as a necessity by all those who have used them and know their value. This was kept steadfastly in view when I was endeavouring to invent a simple, cheap, and convenient reversible frame. I have three kinds of reversibles in my apiary, all metal-ended, and simpler than any I have seen illustrated in the



B. B. J. The above drawing is an illustration of the one you called attention to in the last issue. The flange A, at the side of the metal end, keeps the frame from the side of the hive, and also helps to keep the 'end' in its proper position. It is flanged only on one side, so that its revolution is not interfered with when it is necessary to turn it under the frame, as seen at the bottom. Before using I have tested each frame with a 20-lb. weight, and it bears it well. Ordinary frames can easily be fitted with these ends, and are then reversible.

In the issue of December 15th some editorial remarks were made describing reversibles, and stating that 'if

ever they come into general use a simpler and less extravagant device must be employed,' which made me think that the frame above, called the 'Acme,' is the one thing needful to make reversing popular. We have in this, at the cost of an ordinary wooden frame, simplicity, metal ends, commodiousness, and reversibility. From what I have been able to gather from the *B. B. J.*, very few have tried reversible frames, and still fewer who have tried them extensively. The reason for this, plainly, is because the frames have been too complicated and expensive. This is borne out by Mr. Simmins, in the same issue, on this subject, who wisely said, 'Let bee-keepers bear in mind that any complicated method which adds to the labour and expense of production . . will not be adopted by those who are now compelled to reduce their working expenses to the finest limit.' It is true he does not approve of the principle of reversing, but he does not say he has tried it or seen it tried much; so I conclude that on this point he is an incompetent witness. Mr. Heddon, of America, has used from 4000 to 6000 reversible combs, and after this experience says that he would have none other. Last summer, out of a total of fifty-four hives, I had forty-nine reversibles. Now they all reverse. At first I tried the principle on one or two, and so far approve that I have entirely abandoned the old style. I believe the time will soon come when few frames that are not reversible will be in use.

In the above quoted number of the *B. B. J.* an editorial enumerates two advantages to be derived from reversing, and then proceeds to show that the same can be done without reversing. With your kind permission I will review a few of those remarks and add some further important advantages to be derived from the new process.

First: Combs become attached to the four sides of frame, giving strength. This, it was said, can be accomplished by cutting the comb from the frame, allowing it to rest on the bottom, and tieing in for bees to rebuild the top. A person having many hives, and following this as a system, would find much of his time occupied with this operation alone. With reversible frames the bees need not be shaken off, and with the 'Acme' the operation is as quick and easy as turning the frame upside down.

Second: That by reversing the combs the honey is carried into sections above the frames. I was pleased to read the qualification which followed that: sometimes after this trouble has been taken the combs have to be put into the extractor to make room for the laying queen, for it accorded with my own experience. Last season I had one of my ordinary bar-frame hives supered. Although well protected the bees deserted the super early—and during fine weather—and on examining the hive I found the brood-combs three parts full of sealed honey. I went through the disturbing—and to the bees exciting operation of uncapping; then covered them up for a week, when on re-examination they appeared exactly the same as when I previously opened and looked at them. I put them in the extractor and made up my mind that those frames should be reversible before the year was over.

There seems to be a prevalent idea that the reversing of frames should not take place until the supers are put on; those who wait till then lose more than half the advantages. I reverse mine earlier than that for two reasons, both relating to the important point of spring breeding. It is well known that if supplies are stopped in the spring by bad weather or other unpropitious causes, the queen ceases breeding; sometimes also the bees have an abundance of food just before the honey is gathered freely, and the bee-keeper is anxious not to have too much sugar in the hive at that time. Yet if supplies cease to come in the queen produces slowly or not at all. I have found that reversing the frames in spring and giving the bees occasion to carry their food upwards has the same stimulating effect as feeding, and I have kept hives fully at work breeding on a very trifling amount of food already in the hive.

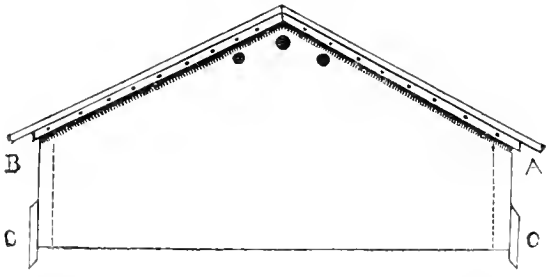
Another advantage is, keeping the brood-nest large though compact. This is a point which cannot be over-estimated. The practice of introducing empty comb into the 'nest' to stimulate the queen is a common one, and is often carried to an extent detrimental to the hive; for if cold weather come the bees are driven from the outer combs to the centre, and 'chilled brood' is often the result. In a reversible hive we can have as much *brood on the three centre combs*—where the bees cluster—*as can be found on five combs of an ordinary hive*, and the fear of chilling is reduced to a minimum. Furthermore, everyone knows that the warmest air is at the top of the frame—just where the old style keeps the food, and the extra heat up there is so much waste. In the reversible frame we have brood in the warmest place—*most compact yet most numerous* on the least amount of food, and best fitted for the coming harvest and its ultimate acquisition by the bee-keeper. Keeping the brood in this manner leaves the outer combs for the incoming honey, and they can either be extracted early or reversed for supering.

I may say, in conclusion, that I have not found the bees nibble away the reversed comb and then rebuild it, as some have stated. It is only the cells at the top of comb that are given upward pitch by the bees, and in reversed combs which I have in stock, which have been well used, the top and bottom cells of the combs are pitched in an opposite direction to each other, so that whichever is turned uppermost has the pitch of the cells upward. This shows plainly that the bees did not bite them away, and there is abundant evidence that the queen did not refuse to lay in them. In fact, last year I had the bulk of my combs full of brood from top to bottom with not more than one or two ounces of food in each.—JOHN RUDGE, *Dursley*.

DRYNESS OF HIVES.

[49.] In reading the correspondence on the subject of hive-roofs, I am tempted to give a plan I have tried with perfect success so far as time allowed the trial to be tested. Like your other correspondents, I have found some difficulty with one or two roofs, and being connected with a railway company, my thoughts turned upon the perfectly waterproof roofs of railway carriages. I have travelled considerably on the railways of our own country, and yet I do not remember ever having noticed a leaky roof. I thought if these carriage roofs are so perfect, why not apply the same principle to hive-roofs? And so I got hold of a workman accustomed to this waterproofing, who has put me into the way of doing my own hive-roofs, and which I found very satisfactory. The roof is made of half-inch stuff planed, and the waterproofing is made of canvas bed on a paste consisting of white-lead, oil, and whiting. Before putting on the canvas, it is necessary to prepare the roof by giving it a thick coating of the paste made as follows:—Obtain some white paint mixed with oil only, just such as is used for outside work; to this add sufficient whiting to convert it when well mixed into a workable paste, which should be laid on with a brush. To stretch the canvas, get a lath A, which will screw to the whole length of the side, place the edge of the canvas between the lath and the side, and tighten the screws. The canvas must be pulled over the roof, but before it is fastened at B it must be thoroughly well rubbed on to the paste with a short piece of wood, such as a short ruler or rolling pin. This makes a perfect bed for the canvas, and is the secret of success in railway carriage roofs, which have to stand a deal of rough usage from hob-nailed boots of the porters when attending to the lamps. When this rubbing in is completed, it only remains to screw down the tightened canvas under the strip B, and treat the front and back similarly, cutting

off the frayed edges all round close to the strips. Two or three coats of ordinary paint over all will make a sound roof with a respectable appearance. As yet I have not found any difficulty in keeping out the wet at the fillets C C, and think possibly the reason is that they



are made thinner than 'Amateur Expert's,' and so the nails, or better light screws, have sufficient hold to counteract the little warping there may be. I do not find this description of roof inordinately heavy. There are no nails put through the canvas on the top. It is so bedded that it shows a perfectly even surface, and will not warp, as I have found the case with zinc when under a blazing sun. The slope may be made so slight that small articles may be placed upon the roof without falling off. The wood need not necessarily be very well seasoned, a point of importance to amateur hive makers. The gables are of simple form, and all is within the capabilties of a tolerably good amateur. I have enumerated the advantages, and on the other hand I must say that the cost in time and material will be something more than that of some ordinary roofs, but I do not think in the future these latter considerations will be sufficient to cause me to depart from my present style when I am increasing my stock of hives. I ought to say that ordinary flush joints are all that are necessary for the roof boards, and two small battens screwed to the middle of the under side makes all firm. Caution: Although the roof will stand a blazing sun, it will not bear the heat from a smoker in full blast, when the tin is actually on the canvas, so far zinc will have the advantage.—Robin, *Myrtle Villas, Hexthorpe, Doncaster.*

[50.] In reply to 'Amateur Expert,' (25), I think the hive I have been making for some time (for which I was awarded a certificate at the Derbyshire Bee-Keepers' Association Annual Show, 1885, for the best hive for winter and summer use) will meet the requirements mentioned. The roof-sides overhang the hive body, a plinth being fastened *inside* the lid to keep it in its place, the outer walls of the hive overlap the inside walls, so that they overhang the floor-board, and effectually prevent the entrance of rain.—Douglas Cooper, *Spa Lane, Derby, Jan. 16th.*

[51.] I quite agree with 'Amateur Expert' from experience that the lid should overhang the hive-side without a plinth, and the hive-side should overhang the floor-board. If 'Amateur Expert' paints each roof with thick paint, and sprinkles fine river sand over it (by means of something like a pepper castor) while wet, and paints again after a few days I think he will succeed in keeping his hives dry.—W. Moroxy, Jun.

[52.] Seeing the above is being discussed in the *Journal*, perhaps the way I make my hive-roofs waterproof may be of use to some of the readers of the *B. B. J.* I make the roof with about two inches of eaves, and then cut a piece of calico to fit it; soak the calico well in thin glue, and then stick it well on the roof; after it is dry give it two coats of paint, and then it will keep out any amount of rain or moisture, even after having passed the hottest summer. It is very cheap and looks neat, as the glue keeps the calico well in its place. Roofs of caravans are covered the same way, and keep weather-proof for years.—H. Rowell, Jun., *Odiham, Hants, Jan. 16th.*

[53.] I was much troubled by my hives letting in the rain until last year, when I tried 'Willesden' paper, two ply, to which I gave two coats of paint. Since then they have been quite dry. I also tack strips on the plinths if required.—A. W. S., *East Gloucestershire, January 15th.*

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[37.] *Comb and Extracted Honey.*—In point of weight for weight the average would be about one fourth more extracted than comb honey; but in running a hive for sectional honey a certain quantity of extracted honey must be taken.—W. B. Webster.

[39.] *Winter Fighting.*—(E. P.) The idea that the bees endeavouring to enter one of your hives and being killed by the defenders of same were the same bees that you placed on a comb into a neighbouring hive is an error, as since the beginning of September we have had weeks of flying days on which they would have found their way back to their original hive; the solution to their fighting will no doubt be found to be that either one of your hives, or an eighbour's, have no stores; the calmness of the intruders is very noticeable during winter robbing.—W. B. Webster.

[39.] *Winter Fighting.*—(E. P.) We never knew fighting, or robbing, to be carried on during the winter months. The dead bees are those aged bees which, as a matter of course, perish from senile decay, and are carried out of the hive. It is quite possible that the united bees may, even at this length of time, return to their former hive, when flight is possible, and their return would cause a little commotion, but no fighting to the extent you represent.—R.

[39.] *Winter Fighting.* (E. P.)—The probability is the bees you united in September being aged, have attempted to return to their old home. We once moved a bee-house, containing six skeps, four yards further south, in October; and though there were no other object in the garden larger than a cabbage, yet they flew over the house and hovered over the old site every fine day during that winter, and, of course, if there had been any hives there, they would have attempted to enter them. You would have been the gainer next summer if you had united them and wintered only three. We are more and more convinced of the uselessness of nursing weak stocks.—Amateur Expert.

[40.] *Spring Management.*—(J. K. Goodall.) It is quite impossible to lay down rules for future management to the extent of your forecast. All depends upon the weather, the fecundity of the various queens, the honey-flow, &c. These being favourable your plans may be successfully carried out, but in the actual working you will find that you are dependent upon circumstances. We think you will find that as many as *twenty* brood frames will not be required. Swarming may, or may not, be prevented. This again depends on the weather and other causes.

[40.]—*Spring Management.* (J. K. Goodall.)—If I were working my bees for section honey, I should not add a top-hive fitted with frames, &c., as you propose, not to speak of a third. Get your bees in good order by judicious stimulating against the first blossoms appear, then place on your tray of sections and increase the sections according to the amount of honey the bees are bringing in. It is impossible to answer your query as

you put it; you must make a study of each hive, no two will do alike, some will require more stimulating than others; all will require the minimum of manipulation, and probably, spite of all the care and experience any of us may bring to bear on any one particular hive, they will swarm in spite of us. Aptitude of resource is the chief factor in honey getting.—AMATEUR EXPERT.

[41.] *Rapid Mortality in a Wintering Stock.*—(Frank McDonogh.)—The dead bees thrown out are those that have died from old age; some stocks do not carry their dead very far from home, but simply throw them outside, especially in chilly weather, such no doubt is the case with yours; others on the contrary carry them away and drop them at a distance. Open the entrance to about three inches, which will be of service in ventilating the hive, and give the bees a better chance of clearing the dead away; half an inch opening is *much* too small.—W. B. WEBSTER.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[54.] *Moving Hives.*—As it is necessary for me to move several hives a few hundred yards, I shall be glad to hear whether the change may be safely made at this time of year at one move.—B.

[55.] *Finding Queen.*—By the exercise of what sense do bees find their queen when she is temporarily lost to them?—F. H.

[56.] *Feeding.*—I have some honey left from last season; would it be advisable to feed the bees with it this spring, and how to give it?—W. P.

Echoes from the Hives.

Hill Wootton, Warwick, January 9.—I like the plan you have adopted of selected queries for the subscribers to answer. I send you an answer to one, No. 3 Query: Upward ventilation is necessary where a crown board is used. Upward ventilation is unavoidable with some of my hives, the entrance being at the top, and bees winter well in them.—F. PERKINS.

Leigh, Tunbridge, January 11.—I have found the *Journal* very instructive, both for myself and my neighbours. Although I am only a novice of three years' experience, and not been able to attend lectures held here as others have, I am called upon for advice by old and young, some having kept bees thirty and forty years; for I love my bees and, therefore, take an interest in them, and they pay me for my little trouble—pleasure I call it.—JOHN HOUNSOM.

Swaffham, Norfolk.—I intend again giving my mite to the good cause, and am pleased to be able to acknowledge that wise counsels have prevailed, and the Association has been doing of late years a good work indeed, the work for which it was professedly instituted, the instruction of the cottager, in the more excellent way. I am much gratified at the great success that has attended the endeavour to establish county Associations. My faith had hardly been large enough to anticipate so large a success.—D. W. PENNELL.

NOTICES TO CORRESPONDENTS & INQUIRERS.

COL.—1. *Making Section Racks.*—The description you send of your proposed make is not quite in accordance with our views, and is too small for convenience in extracting the filled sections and filling up with empty ones. You should leave sufficient room for separators, which you do not mention, and also for a board, with a pair of lock springs to insert behind the three rows of sections to keep them close together. Your dimensions seem not to agree. You say $4\frac{3}{4}$ deep and that a four-inch section resting on a $\frac{1}{4}$ inch lath comes flush with the top. We think you would expend a few shillings to advantage in buying a rack to copy. 2. *Candy.*—We prefer loaf sugar to Demerara. Instructions have been recently given in our columns, to which please refer. 3. *Pea Meal in conjunction with Dry Sugar.*—You can mix it with the sugar; do not overdo it, an ounce to a pound of sugar will be ample. 4. *Dark-coloured Foundation.*—If the reputation of the seller is such that you can rely upon its being pure, it would probably be as good as that of a better colour.

R. J. N.—Internal measurement of hive for standard frames $14\frac{1}{2}$ inches wide and $8\frac{3}{4}$ inches from upper side of floor-board to edge of wall on which the frames rest. Hints for amateur hive-makers have frequently appeared in our columns. We may shortly repeat them in a very plain and simple form.

JOHN BULL.—We should prefer the enamel cloth; but the sample sent would make a fair substitute.

J. GEORGE.—The dried pollen being removed from the combs, there would be little danger in using them again. If there should be any doubt as to the healthiness of the combs, use foundation.

J. EYLEY, *Box.*—The Bligh Competition being now a matter of the past, it is not desirable to continue the controversy.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
WREN & SON, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

BEE & FRUIT FARMING Co., Limited, St. Mary Cray, Kent.
BRITISH HONEY Co., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

BENTON, F., Munich, Germany.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

LYON, F., 94 Harleyford Road, London, S.E.

THE
BRITISH BEE JOURNAL

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Editorial, Notices, &c.

THE BRITISH BEE-KEEPERS' ASSOCIATION.

Meeting of the Committee, held at 105 Jermyn Street, on Wednesday, January 20th. Present: Hon. and Rev. H. Bligh (in the chair), Rev. F. G. Jenyns, Rev. F. S. Slater; Captain Bush, Captain Campbell, J. M. Hooker, R. J. Hinton, H. Jonas, D. Stewart, G. Walker, W. O'B. Glennie (Treasurer), and the Secretary. Letters were read from the Rev. Dr. Bartrum and the Rev. George Raynor regretting their inability to be present.

The Balance-sheet for the year 1885, as audited by Mr. Kirchner, was submitted and approved. The Finance Committee recommended that the Association's Certificates, as awarded at shows, should be mounted on cardboard previous to being sent to the exhibitors. The leaflet, *Honey as Food*, was further considered and amended. The Secretary was instructed to procure estimates for printing the same, and to confer with the Finance Committee in reference thereto.

Quarterly Meeting of County Representatives held at 105 Jermyn Street, subsequently to the above meeting. Present:—C. H. Haynes (Worcestershire), Rev. W. E. Burkitt (Wilts), J. P. Sambels (Herts), Jesse Garratt (Kent), Mrs. Currey (Berks), Rev. E. Clay (Bucks).

The suggestions for the management of shows as prepared by the Committee of the B. B. K. A., were discussed and approved.

The mode by which exhibitors could be allowed to exhibit prize-cards won at previous shows was considered, the meeting being of opinion that such cards might be exhibited upon separate stands and upon such terms as local committees might decide.

Mrs. Currey (Berks) reported that she had been requested to suggest that in view of no annual metropolitan show being held, the B. B. K. A. should consider the advisability of extending the prize list of the Bee Department at the Royal Agricultural Show. It was resolved that this matter be discussed at the Annual General Meeting of the B. B. K. A.

Notice to Candidates who have gained 1st, 2nd, and 3rd Class Certificates during the Year 1885.

The Committee have resolved to provide a new form of Certificate. The same is in course of preparation. Candidates entitled thereto will receive them on the earliest possible date.

The members then resolved themselves into the Quarterly Conversazione. Mr. W. O'B. Glennie was called to the chair.

The Chairman said he was glad that the last one or two quarterly meetings had resolved themselves into the form of *conversazioni*, at which several subjects were introduced and opinions ventilated thereon, instead of one only being brought forward and discussed. The same rule would be observed on that occasion. Mr. Grimshaw had kindly consented to read a paper entitled 'The Identity of the Bee-sting with the Ovipositor of some other Insects.' An explanation of Mr. Green's 'Climax' hive would also be read: and should there be any time at their disposal afterwards he had in reserve a paper from Mr. Raynor, upon which they might found a discussion, 'On the Management of Bees in Winter.'

Mr. Grimshaw then proceeded to read his paper.—

ON THE IDENTITY OF THE BEE'S STING WITH THE OVIPOSITOR OF OTHER INSECTS.

I have often thought that in the ordering of things there was some seeming injustice done to the poor bee, in the fact that in the majority of instances it loses its life as a penalty for exercising that first law of nature, 'self-preservation,' or defence. There seems to be something wrong, some unfitness, in the unsuccessful attempt of the bee to remove its sting, which is left in the wound, and rends from the body of the insect a portion of its contents, the loss of which is fatal. Instead of the almost universal harmony in nature's 'adaptations of means to ends' here appears a discord. Then, again, if the sting were originally intended as a weapon of offence or defence, what has the poor, much-abused drone done that it should be denied one, open as it is to attack from man and beast within and without the hive? and why does not the queen use it, both genders being peculiarly stay-at-homes intrusted with the care and safety of the habitation? Why should the gift be confined to the female and the use of it by the female be death? Is it not that the sting is an organ which has fallen into disuse in consequence of the advance of some other organ co-equal with the growth of bee-intelligence, thus rendering its original 'occupation gone,' and that it is now in process of being adapted for a totally different purpose? The jaws of some insects become aborted and useless by having food prepared for them, and the wing-cases of others become united after generations of inaction; but if my hypothesis be correct, the honey-bee well justifies the assertion of a recent writer* as to its great proportionate brain-weight in comparison with other insects, by wisely using a useless ovipositor as a weapon of defence, until perhaps in course of time the sting-barb becomes aborted, and then disappears every objection to its being perfect for its acquirements, used and withdrawn at pleasure, for attack or defence, prolonging, as it should, the existence of the bee and its race, instead of, as now, proving a suicidal act to use it. The intelligent use of the sting is shown by the care of the queen in searching for a suitably soft place, and time when to sting, during a queen-battle, and by the worker in its attempts to sting the eyes, nostrils, &c., and thus find the likeliest place from which the sting *might* be withdrawn. Sometimes, when examining a bee-sting under the microscope, I have failed by all means to find barbs and came to the conclusion that they were either abnormally absent or rested flat on the dart as the barb does on a harpoon, only coming into play on attempted withdrawal.

* Cheshire, *Bee-keeping*.

If we examine the ovipositor of the Ichneumon, *Pimpla manifestator*, we find its three-inch-long sides enclosing a boring instrument having seven or eight tooth-like processes on each side.*

The Gall-fly (*Cynips*) makes a hole in the plant before depositing in it an egg, by means of a horny ovipositor much longer than the body of the insect, of a chestnut colour, which issues from a sheath. We are told † that the female gall-fly 'ejects into the cavity a drop of her corroding liquor, and immediately lays an egg or more there; the circulation of the sap being thus interrupted, and *thrown by the poison into a fermentation* that burns the contiguous parts.' Kirby and Spence ‡ tell us the parent fly introduces her egg into a puncture made by *her curious spiral sting*. They also say (page 64) that 'the tremendous arms with which the Hymenoptera annoy us are two darts, finer than a hair, furnished on their outer side at the end with several barbs not visible to the naked eye, and each moving in the groove of a strong, and often curved, sheath, *frequently mistaken for a sting*: which, when the darts enter the flesh, usually injects a drop of subtle venom, furnished from a peculiar vessel in which it is secreted.' The writer was twice stung by an Ichneumon, and once by the *Pimpla manifestator*. Here we have saw-using insects converting the weapon into machines of offence; and it is not perhaps assuming too much if we assert that insects such as bees, provided with tools now used as stings, have in times past used these double saws in the process of ovipositing, and that this latter is indeed their proper office and function.

Let us look now at the *Cicada* (the tree-hoppers), to which the cuckoo-spit insect is allied. The male insect (like the drone-bee) is devoid of a cutting implement, this in the female (as in the female bee) is lodged (according to Réaumur§) in a sheath which lies in a groove of the terminating ring of the belly. A slight pressure causes it to protrude in both cases. In both cases the sides are finely indented with teeth. In the tree-hopper the barbs are nine in number on each side, in the bee they are variable in number. In both cases the three pieces (saws and a groove) are so united that the two saws or files can be easily put in motion, advancing alternately. In a quotation from *Insect Architecture* we read as follows:—

'In order to see the ovipositor a female saw-fly must be taken and her belly gently pressed, when a narrow slit will be observed to open at some distance from the anus, and a short, pointed, and somewhat curved body, of a brown colour and horny substance, will be protruded' (page 153). 'The curved plates which form the sides of the slit, are the termination of the sheath, in which the instrument lies concealed till it is wanted by the insect. The instrument thus brought into view is a very finely contrived saw, made of horn, and adapted for penetrating branches and other parts of plants, where the eggs are to be deposited.'

Is not this an almost accurate description of the sting of a queen-bee? Further on we read (page 156),

'When the female saw-fly has rendered the groove as large as she wishes, the motion of the tendons ceases and an egg is placed in the cavity. The saw is then withdrawn into the sheath for about two-thirds of its length, and at the same moment a sort of frothy liquid, similar to a lather made with soap, is dropped over the egg, either for the purpose of glueing it in its place or sheathing it from the action of the juices of the tree.'

Surely I might be reading an account of the queen-bee engaged in laying, substituting the words that the cell is ready made for her, and rendering the saw-like sting useless except for the purpose of exuding a drop of adhesive or protective liquid, which attaches the egg to the bottom of the cell. Let us now look amongst bees themselves for such gradations in intelligence as will guide us to the inference that the sting of the honey-bee (at the head of the family) is only a tool or instrument fallen into desuetude in countless generations and in process of adaptation to other purposes.

We have solitary bees in opposition to social bees; some eating their food as they get it as opposed to those which lay up stores which will enable them to survive through winter. Bees building in holes excavated in bricks, making nests of clay, sand, earth, moss, wood, wool, leaves, petals of flowers; in holes in the ground, stone-heaps, posts and rails, on walls, or window corners, in ready-made holes in trees or rocks, or easily excavated out of soft decaying wood. Against and ahead of all these is the orderly social honey-bee with forethought, almost amounting to reason, which utilises its exudations of fat in building geometrically accurate cells, requiring neither the strong jaws of the mason bees for manipulation into cells or nests of cells, nor the saws of the saw-fly for cutting out apertures in which to deposit its eggs. The carpenter bee labours hard with its two sharp teeth in wood-chiselling and cements over her excavation with a preparation of sawdust; the mason cements grains of sand together; the mining bee digs a tubular cell in the ground; leaf-cutters form cell after cell of leaves or bark and ties them together with silk; and another (*Anthidium manicatum*) will not even go to this trouble, though its mandibles are as strong as the masons or carpenters, for it, according to Kirby and Spence, makes choice of the cavities of old trees, keyholes, and similar localities, but will sometimes scoop out a cavity when it cannot find one.

We have, then, at the head of this list our own honey bee, which will have its nest ready made, and expends its intelligence in other directions. At the foot of the list, through various grades of 'cuteness, is a wasp gnawing a nest out of a hard brick (page 26). We have grades from simple bags or cells to beautiful hexagonal combs, and also grades from solitary life to a community of many thousands. If I cannot show similar degrees of bees using saws at one end, to those using jaws at the other extreme, I have shown Hymenoptera (Ichneumon) using saws as stings, stings ejecting poison; and I have also shown Hymenoptera (bees) possessed of stings, which have all the characteristics of saw-using insects,—stings with barbs moveable on alternate sides on a groove; and I lay it before you, as a reasonable inference, that their primary *raison d'être* was as nest-cutting implements. If as weapons, why not found in males, and why accompanied by the penalty of death in the females? Why are there races of stingless bees more populous than our hive-bees (page 144), as discovered by Clavigero in Mexico, and as found in the island of Guadaloupe? (page 143). Is it not a fair assumption that the secretion of wax renders unnecessary the use of the sawlike ovipositor, the sting, and that, in the imperfect female the worker, formic acid, not being in regular requisition during egg-laying, oozes out of the ovipositor on the least use of it in stinging? The perfect insects only of the hive have not the sting as we know it. The queen only uses it in a combat with another; she will neither attack others nor defend herself from bee-enemies, and the drone can do neither, yet both together reproduce their kind exactly, a proof of their completeness. The sting-bearer, as we know it, is imperfect, not reproducing its kind, except under such abnormal conditions as feeding in the grub state on a small quantity of royal food, which imparts to it the power of laying drone-eggs. If the other condition of becoming perfect were granted it, the larger cell, doubtless the generative organs would be developed, and a perfect queen would result, with the curved ovipositing implement of the saw-fly, from which exudes the drop of protective adhesive substance which fastens the end of the bee-egg to the cell-base.*

The Chairman thanked Mr. Grimshaw for his paper, and said he could bear out the statement of that gentleman with regard to the saw-cutting instruments found in the hymenoptera and other insects. He had studied the subject under the miscroscope, and very recently had been engaged in taking notes of the cutting instruments of the saw-fly and others in company with a member of the Microscopical Society.

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* *Insect Transf.*, C. Knight, Publisher, 1830.
† *Spectacle de la Nature*, I., 119. ‡ *Introd* II., 119..
§ *Insect Architecture*, page 148.

* The identity of the bee-sting to ovipositor of other insects was the subject of a work by Hermann Dewitz, published in 1874, entitled *Vergleichende Untersuchungen über Bau und Entwickelung des Stachels der Honigbiene und der Legescheide der grünen Heuschrecke*, in which he traces the development of the organ from the larva to the perfect insect.—Ed.

Mr. Garratt expressed his indebtedness to Mr. Grimshaw, but as no notice had been given of the subject he felt unable to discuss it. At first sight the matter appeared to be one more fitted for the consideration of a Physiological Society than of the Association, but when they had the opportunity of reading the paper in the columns of the *Journal* the writer's remarks would be closely examined, and would receive the attention they deserved. Mr. Grimshaw appeared to have taken it for granted that fertile workers were developed in greater degree than ordinary workers owing to their having partaken of the royal food. That was not a new idea, but he looked upon it as only a suggestion and not an established fact.

Mr. Stewart thought that the bee-sting was an instrument so thoroughly adapted for the use to which it was put that it could hardly be taken as an afterthought of the Creator. Although there were stingless bees, these existed under conditions where self-defence was not necessary. The sting was not required for the purpose of depositing at all. The propagation of the species was sufficiently provided for by the egg-laying power of the queen. He thought there was no ground for finding fault with Nature in this instance. The queen carried on family affairs with the assistance of the drones, whilst the others worked for the home and protected it with their stings. The subject should be considered a great deal before they accepted the theory set up by Mr. Grimshaw.

Mr. Baldwin said that if the sting of the bee was absolutely necessary for the defence of the colony, how unfortunate it was that the insect lost its life in such work.

Mr. Grimshaw said, in answer to Mr. Garratt's objection, that he only suggested it was a fair inference that a fertile worker was produced from an ordinary worker by partaking of small portions of royal food dropped into the cells over which bees passed in feeding the queen grub, seeing that it was generally admitted the queen herself was developed by feeding on royal jelly. But that consideration did not touch the position he had taken up. He had no desire to find fault with Nature: on the contrary, he looked on with admiration at the constant development going on in the insect world in common with all animal life adapting itself to circumstances. He, however, considered the sting a most imperfect as well as an unjust and cruel instrument, because it could not be withdrawn from the wound it inflicted, and because, instead of preserving the life of the insect using it, it caused death. It seemed to him that the sting was resorted to because it was the best weapon at hand when the bee found itself attacked. Again, he suggested that there was a fault somewhere, because the queen did not defend her hive or offspring, and that the drones, who always stayed at home and were peculiarly fitted as defenders of the hive, were unprovided with this means of repelling attack. He thought that if the Almighty had endowed the bee with its sting as they knew it, it would have been perfect as well as common to all bees alike.

Mr. Stewart saw nothing remarkable in the bee dying after having used its sting. It was like the soldier who went forth to battle and lost his life.

Mr. Grimshaw demurred to the analogy, because every soldier did not lose his life in battle.

Mr. Zehetmayr and Mr. Baldwin thought that the bee's greatest enemy was its own kind, and that when a bee stung one of its own species it did not lose its life.

Mr. Hooker said they had evidence of this in the case of two queens fighting: in reference to which Mr. Baldwin remarked that the queen's sting was most imperfect.

Mr. Grimshaw had seen stings with no barbs on whatever.

Mr. Sambels did not think that bees made choice of soft places to insert their stings. He knew they would sting clothing, and he had seen Eastern bees charge posts, hive-stands, and in fact anything that obstructed them. They would sting on any part of the body, and, he would say, showed no preference for one particular spot.

Mr. Grimshaw suggested that perhaps the reason of that was that the inhabitants of the countries whence the foreign bees came were not so well clothed as the people in England, and the bees were not accustomed to seek vulnerable places. (Laughter.)

Mr. Stewart thought that the cause of the bee stinging the bare flesh, especially near the eyes, was due to the fact that immediately one felt the insect alight there panic ensued, and the slightest disturbance irritated and frightened the bee, which at once endeavoured to defend itself.

Mr. Garratt said that the habit of the bees in turning out the drones at a certain time of the year seemed quite unique. The honey-bee formed large colonies, and was thus different generally from most other kinds of bees. The labouring bee seemed to have a superior power given it by which it rid itself of that encumbrance which was altogether unnecessary for the benefit of the colony.

Mr. Blow, in speaking of worker-bees stinging others and losing their lives, said, with regard to ordinary English bees, that several days were occupied by them in turning out their drones, which they did not sting to death, but gnawed their wings, whilst in the case of Eastern bees the drones were all turned out in one day and all killed by stinging. He had examined almost a peck of drones in front of a hive of Eastern bees, and not found a single worker dead amongst them.

Mr. Grimshaw, Mr. Hooker, Mr. Stewart, Mr. Sambels, Mr. Baldwin, and Mr. Zehetmayr, continued the discussion, the majority of speakers taking an adverse view of Mr. Grimshaw's theory. Mr. Stewart pointed out, in reference to the fact which Mr. Grimshaw seemed to attach so much importance to, namely, that the drones who remained at home, and ought therefore to be the natural defenders of the hive, were stingless, that naturalists had been unable to determine the precise functions of the drones in the hive. It was quite certain that they had other duties besides helping to rear the families, but what these were no one knew at present. He hoped Mr. Grimshaw would not think he had criticised the paper in a hostile spirit, than which nothing was further from his mind.

[We are obliged to postpone to a future number Mr. Green's paper on the 'Climax' hive, and the subsequent discussions.—Ed.]

HARRISON'S REVERSIBLE REMOVEABLE METAL ENDS.

We are pleased to note that so much study and attention are being bestowed on the new feature in bee-keeping, namely, reversible frames. From those which have recently been brought before our notice, we are inclined to think that the plan of the inner revolving frame is being dispensed with, which in a hive, say, of ten frames, as we intimated in page 383, Vol. XIII., would involve a loss of 5250 worker cells, and that an endeavour is now being made to utilise the whole of the space in the frame for the service of the bees. The various contrivances of ends for reversing frames have been very ingenious and clever, and that put forward by Mr. Harrison has a good claim on the bee-keeper's consideration. His plan is very simple, and utilises his metal ends. The ends of the frames are cut off, and the reversible removeable metal ends take their place. They are secured in their position by a single pin being pressed, not through the wood, but under the corner of the

frame. The pin being removed, there would be no difficulty in changing the position of the ends or frames. Used only as removeable ends, they would prove serviceable to bee-keepers having shallow extractors.

HOLLANDS' CONVEYING AND INTRODUCING CAGE.

We have recently given an illustration of Mr. Frank Benton's admirable and ingenious cage for mailing queens from foreign parts. Mr. Hollands, of Waddon, Croydon, combines this with an introducing cage. The cage, which is one of Mr. F. Cheshire's clever and practical contrivances, is fitted in a block on Mr. Benton's plan of two chambers, one with ventilation and one without. In the lower compartment a tin tube is used for the reception of the candy, so that the wood should not absorb the moisture from it. With each queen sent out Mr. Hollands includes one of these combination cages. It is a very safe and secure mode of transmitting queens. Mr. Cheshire's introducing cage gives great freedom and comfort during introduction, is easy of application, does not damage the comb, and is perfectly safe.

ASSOCIATIONS.

KENT BEE-KEEPERS' ASSOCIATION.

The annual general meeting of the Association was, by the courtesy of the Royal Society for the Prevention of Cruelty to Animals, held, as on several previous occasions, at 105 Jermyn Street, St. James's, on Wednesday, the 13th January, at five o'clock in the afternoon. The Rev. Andrew Welch, vicar of St. Mary Cray, and Chairman of the Council for the past year, occupied the Chair. The Report of the Council and Balance Sheet for the year 1885 were read. The Chairman, in moving that they should be received and adopted, adverted briefly to the chief topics of interest referred to therein, and congratulated the meeting that the financial condition of the Association showed a decided improvement upon that of the previous year. Mention was made that Mr. Garratt had determined to relinquish the post which he had long held of Secretary of the Association, and the hope was expressed that in Mr. Waters an able successor to this important office had been found.

The adoption of the Report and Balance Sheet, together with a vote of thanks to Mr. C. Darrell for his kindness in auditing the accounts, was unanimously agreed to. The customary votes of thanks to the retiring officers, the council, and local Honorary Secretaries for their services during the past year, were duly and cordially given. The thanks of the meeting were also given to the Royal Society for the Prevention of Cruelty to Animals for their repeated kindness in granting the use of their Board Room for the occasion. The election of President, Vice-Presidents, Council, Treasurer, and Secretary for the ensuing year, and the appointment of representatives of the Association to the Quarterly Conference of the British Bee-keepers' Association, were formally carried out. The drawing on behalf of cottagers for two hives resulted in favour of Mr. R. Filmer, of Ruckinge, near Ashford, and Mr. W. Campany, of Hawkhurst.

I have to thank you for the kind assistance which you have given to our Association in its search for a Secretary by notifying the want in the pages of the *Journal*: and I have much pleasure in informing you that, owing to such notice, we have secured the services of a gentleman who is well qualified to carry on the work in our county. Mr. E. C. Waters, of Chislehurst, the able Secretary of the West Kent Horticultural Society, is the gentleman referred to, and his appointment having been approved by the General Meeting of the Association on the 13th inst., he is now *de facto* Secretary of the Association.—J. Garratt.

CORNWALL BEE-KEEPERS' ASSOCIATION.

The annual meeting of this Association was held at the Town Hall, Truro, on Wednesday, January 13. President, Rev. W. Rogers, in the Chair, Rev. A. R. Tomlinson, Rev. C. R. Sowell, Mrs. Polwhele, Mrs. Tomlinson, Messrs. T. R. Polwhele, G. H. Chilcott, J. W. Harrison, T. Treleaven, J. Harris, G. Gradidge, G. E. George, and C. Kent.

The committee, in their Report, congratulated the members upon having passed a very successful year. At the close of 1884 the Association was 48*l.* 18*s.* 10*d.* in debt. This has now been reduced to 17*l.* 18*s.* 6*d.* The members now number 160, with annual subscriptions amounting to 46*l.* 3*s.* The total income during the past year was 82*l.* 0*s.* 4*d.*, and the expenditure 81*l.* 7*s.* 3*d.*, leaving a balance of 1*l.* 13*s.* 1*d.* in the bank. During the year the Committee completed the purchase of the bee-tent, and, with one exception, had paid off the prizes outstanding from the Truro Show in 1884. The past season had been most favourable for bee-keepers, and a very large quantity of honey was produced in Cornwall. A good deal of this was disposed of beyond the limits of the county, but the larger portion was sold in small quantities to retail purchasers.

On the motion of the Rev. A. R. Tomlinson, seconded by Mr. George, the Report was adopted.

The Earl of Mount Edgcumbe was re-elected president, and the following as vice-presidents:—Hon. and Rev. J. T. Boscawen, Mrs. Digby Collins, Mr. T. Martin, Lord Robartes, Sir John St. Aubyn, M.P., and the Earl of St. Germans. The Committee are as follows:—Messrs. A. Bailey, Liskeard; W. K. Baker, Towednack; J. Branwell, jun., Penzance; G. H. Chilcott, Truro; G. Dixon, Truro; G. H. Fox, Falmouth; G. Gradidge, Truro; G. E. George, Probus; Rev. J. Kempe, St. Breward; Messrs. H. B. Neame, Portreath; W. Prockter, Launceston; T. R. Polwhele, Polwhele, Truro; Mrs. Polwhele, Polwhele, Truro; Rev. W. Rogers, Mawnan; Mr. J. Rowse, St. Agnes; Rev. C. R. Sowell, St. Gorran; Mrs. Tom, Rosedale, Truro; Rev. A. R. Tomlinson, St. Michael Penkivel; Messrs. J. W. Wilkinson, Perranarworthal; J. Williams, Scorrier House, Scorrier; T. Treleaven, Creed; W. Nicholl, Helland; and J. W. Harrison, Tregony. Mr. A. P. Nix was re-elected treasurer, and Mr. C. Kent secretary.

Votes of thanks to the Chairman, and to the Mayor for the use of the room, terminated the proceedings.

OXFORD BEE-KEEPERS' ASSOCIATION.

The annual meeting of the above Association was held at the Clarendon Hotel, Oxford, on Saturday, January 14th, under the presidency of the Rev. D. Thomas (Garsington). There were also present G. Herbert Morrell, Esq., the Rev. F. C. Dillon (hon. secretary, Enstone), the Rev. W. Neame (Forest Hill), the Rev. F. Sturges (Filkins), Mrs. Neville, and Messrs. Penny, Tite, Salmon, Crute, C. Harris, Grant, &c.

The report stated that the number of members showed a slight increase, and that the deficiency with which the year began had been wiped out. The annual show had been held in the gardens of Wadham College, in connexion with the Royal Horticultural Society, on July 31st, and drew large numbers of visitors to see the exhibits. The bee-tent had been erected at eleven different places with varying results, and a very satisfactory report was given of the visits of the expert during his spring and autumn tours.

The President (Lord Jersey) and the vice-presidents were re-elected, Mrs. Baskerville's name being added to the list.

The Hon. Secretary (Rev. F. Dillon) said he was sorry that he was obliged to resign his office. But afterwards at the earnest solicitation of those present, he consented to reconsider his decision and continue in office for another year.

It was agreed to elect a secretary for each deanery, and the following were elected:—The Rev. F. Sturges (Witney Deanery), the Rev. W. Neame (Islip), the Rev. D. Thomas (Cuddesdon), Mr. W. C. Hayes (Chipping Norton), Mr. C. Harris (Oxford), Mr. G. Harris (Bicester). It was decided that the preceding be *ex officio* members of the committee, which is composed as follows:—G. Herbert Morrell, Esq. (High Sheriff), Dr. Boyton (Watlington), Messrs. Salmon, C. Taylor, Crute, W. Grant, and Penny.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

The general annual meeting of the members of this Association will be held on the last Saturday in January (Jan. 30th) at 2.30 p.m. at the Old Town Hall, Leicester.

Selected Query.

[57.]—*What do you consider the best food for wintering bees upon?*

I prefer honey gathered in the natural way and sealed. But as it pays to extract the honey and give other food, I place next in order syrup made from refined sugar and water. I usually add a small quantity of solution of salicylic acid in alcohol as an anti-ferment. Some samples of sugar are so prone to crystallise when made into syrup, that it is necessary to add a small portion of cream of tartar to 'kill the grain,' as confectioners term it; but I do not like any chemicals if I can do without them. I place the greatest importance upon the food, whether honey or syrup, being sealed by the bees before going into winter quarters. If from any reason I find stocks insufficiently provisioned, when it is too late to feed with syrup, I prefer the old-fashioned deliquescent barley-sugar given in a float feeder to the modern candy. If I do use candy I remove the syrup from the fire at an earlier stage than recommended in books, and so obtain a softish cake consisting of very minute crystals, and I only give a small cake (two or three ounces) on the top of the frames at a time; replacing as consumed.—F. Lyon.

Their own honey is undoubtedly the best food for wintering bees upon; but failing this, I prefer syrup made from the best loaf sugar. Artificial food should be given so that it can be stored and SEALED. All *hand-to-mouth* feeding should be avoided, and only resorted to when previous neglect has induced starvation. [I have ceased to believe in 'spring-stimulating,' and have found those bees to do best, which have had a large store of honey left for winter and spring use, with plenty of room for the natural expanding of brood.]—J. Lingen Seager.

The best food for wintering bees upon is syrup made with loaf sugar, and boiled for five minutes with half of its weight of water, say ten pounds of sugar to five pounds of water (or two quarts). The honey should all be extracted by the beginning of September, and the bees immediately fed up to the right weight.—William Carr.

I have not noticed that it makes much difference whether bees are wintered upon honey or syrup; but the stores should certainly be of one or the other and sealed. I have wintered a great number of colonies every year entirely on syrup, and with the best results; but I should prefer the stores to be honey of good quality. —C. N. White.

Syrup made from the best loaf-sugar. The way to prepare it will be found fully described in *Modern Bee-keeping*, published by the British Bee-keepers' Association.—John M. Hooker.

The honey gathered by the bees themselves with the exception of that from honey-dew and heather. Of the substitutes I considered syrup, made from white loaf sugar in the usual way, by far the best.—F. Zehetmayr.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES FROM THE SOUTH OF IRELAND.

[58.] My experience this autumn is, that the bees travelled considerable distances to the heather, as I found hives in my garden storing heather honey as long as the blossom lasted, for which they must have travelled a long way, three and four miles, as the patches of heather close at hand coming early into bloom were almost exhausted before the mountain heather was fairly in its glory. I have nine stocks comfortably packed for the winter. They are in eight cottage-hives and one Combination, with nine standard frames in each. They are wintered on five, six, and seven frames according to circumstances. As under very adverse conditions I brought my colonies through last winter with great success, it may be useful to say that each hive has a roughly-made outside cover, fitting loosely over the ordinary cover. It is made of thin unplaned wood painted, and I found a 'handy-man,' glad to make and paint them for 1s. each. I supplied the materials, the wood, odds and ends of timber, and old packing-cases. On the roof of each I put three-pence worth of tarred felt, and for the protection they give against cold and damp I think they are well worth the small cost. With care they ought to last ten years or so. As I have a good many bee-keeping neighbours who starve their bees; I find my well-stored hives a mark for robbers, and am obliged to keep my entrances very much contracted during this mild weather; so, as I did not wish to check ventilation, I used strips of perforated zinc to contract the entrances, slipping it behind the sliding doors to steady it. With the exception of one week's frost and some cold days, this has been a very favourable autumn and winter for bees. Warm muggy days, letting the bees fly in such numbers that one half forgets it is December. The ivy bloom is not long over, and now the furze is beginning to bloom. It is easy here, if one has only experience and luck, to get hives strong in bees early in the season. Of course, weather has something to do with the matter also; but we seldom see snow, except on the mountains, and have little frost of the severe and enduring kind after the first of January. The masses of furze that come into bloom so early on our sunny sheltered banks, and the quantities of early pollen-yielding flowers and shrubs, are a great inducement to early brood-raising. I have often tried to get my bees to look at artificial pollen, but they utterly scorn the attention, feeling, I suppose, no need of it. I have to thank you extremely for your most valuable instructions about inverted skeps, and I trust I may have later on to announce that we have acted on them successfully.—Irish Novice.

FIXING COMB-FOUNDATION.

[59.] As the plan adopted by me last season for fixing comb-foundation in bar-frames, appears to differ from anything I have seen noted in the *Bee Journal*, I beg leave to lay it before your readers. I have the top bar made in two pieces of equal width, one piece of which is firmly nailed to the sides, also one end of the second half, leaving the opposite end free; now if the frame is stood on a bench holding the loose end in the left hand, the comb can be introduced from underneath, tighten and nail down, when the comb will be found secure. I have been led to adopt the above plan through finding saw-cuts as usually made both troublesome and insecure. It will be seen from the above that the comb can with ease be fixed flush with the top bar, thus leaving no crevices for wax-moth to deposit. Perhaps some of your readers may think that by having the top bar in two pieces is a weakness; but I can assure them, that although I have used whole sheets of foundation in the above-mentioned frames,—I have not had a breakdown.—J. SHRIMPTON.

DRIVING BEES.

[60.] I have never seen any description of driving bees and carrying them home same as I have done it. If you think it would be of interest you might insert it. Herring boxes are very cheap. I have procured some for driving bees into them from skeps. Cover them with a piece of coarse material. I get a piece of hoop-iron and bend it in this shape. As you will observe a small box will fit in at the top while the hook will hang on one side of the skep and so drive the bees into it.

I leave an opening of two or three inches at one side of the covering which is fastened to a frame to open or shut. This can be fastened up while driving the bees into it by means of a peg on one side of the box. The hoop-iron frame as above is strapped to the hive or skep as tight as you can strap it, which fastens the box very tight, so it is in no danger of moving with the strap. I fasten all the boxes together to carry home. I have driven about forty skeps in this way last season. One might carry as many as a dozen on your shoulder home, as these kind of boxes are very light.—F. G. AYLING, *Privett, Alton, Hants.*

MY EXPERIENCE OF BUMPING.

[61.] With your permission I desire to give my experience of bumping and driving in 1884 and 1885. At the end of October, 1884, I had four lots of bees offered me. I did not hear of them till midday, but was unable to go before evening. They had to be taken that day or killed, so I was obliged to have them out sharp. Following Mr. Lyon's directions to the letter, I got the bees all out in fifteen minutes, but was obliged to bring them away in their own skeps, as it was too dark to put them into others. I did not think that bad for a first attempt. I had driven several lots before in from ten to twenty minutes each. This year I have bumped nearly twenty, all without stopping entrances, as I did those I took in the evening.

One hive took me five minutes without a single sting. Three (with a friend to help in taking combs, as I brushed bees off, uniting two, and packing up,) occupied thirty minutes. One matter I noticed about these last, numbers of them buried themselves in their cells, they preferred to be brushed asunder with a goose-wing than come out; yet they were extremely quiet, and I was not stung. A lot of five (with help) took me about thirty minutes to get out. A lot of six, forty-five minutes, uniting into three lots in my own skeps and packing up without any help. These were all done in September.

One lot I had great difficulty with in August. A cast that came out in June, and put into a large skep which was crammed with honey, bees, and brood in three centre combs. The weather being warm and the combs very tender, they broke to pieces when taking them out. I learnt more by that one than I did by all the rest. I received about thirty stings, and also learnt never to bump in August, as it is generally very warm and there is a quantity of brood, unless you are sure there is no brood. I have had no difficulty in September, when there is scarcely any brood and the weather cooler.

I have driven several lots besides, two skeps with foul brood.

I find when once the skeps are bumped on the ground it does not do to stand and look at them, or to think of a few stings, but lose no time and out with the combs sharp.

I heard one man say before he could get combs out the bees were up all over the top, and he preferred driving; but for my part I am very much in favour of bumping.—JOHN HOUNSOM, *Leigh, Tunbridge.*

A FEW WORDS ABOUT BEES AND THE PROFITS TO BE MADE FROM THEM.

[62.] There are very many cottagers who do not know that three good stocks of bees may be made to pay as well as a pig and with far less trouble and outlay. Wishing to try thoroughly myself if it really was true that such a large supply of honey could be obtained from bar-hives as often stated, I started with fourteen stocks, thirteen of which had to be transferred into bar-hives of standard size, and one I left in its skep. Eight of the hives were Abbott's large Irish hives, two their twin hives, one a Cottage hive, and two of Hole's hives taking ten bars; and I took from them over 700 lbs. of honey, including that from the swarms, as well as 4 lbs. of wax. The early honey harvest from fruit blossoms failed owing to bad weather, and it was not till the middle of June that the bees began to store the honey well; again in August there was some bad weather. This would, therefore, be a fair year to take for an experiment of the kind. Five hives lost their queens at the end of June and beginning of July, and had to be requeened; four swarmed, one swarm being lost. It will be seen the average yield was 50 lbs. of honey per hive, which sold at 7*d.* the pound would give 17. 9*s.* 2*d.*, and out of every three hives one swarm might be expected, making the profits stand thus:

150 lbs. honey at 7*d.*	£4	7	6
1 lb. wax	0	1	6
1 swarm	0	15	0
	£5	4	0

I had besides more than two dozen worked-out combs and a good many sections, which would also add about 2*s.* per hive to the profits.

A cottager wishing to start bees (women can manage them quite well) would not most likely want to buy three stocks at once, it would cost too much; so this is, I think, the best way to begin. In autumn many stocks in skeps can be bought for 15*s.* or 12*s.*, or in spring a swarm always; and very often a good stock can be bought for 15*s.* He must buy enough wood, which would cost about a shilling, and a box about 21 or 24 inches long and 19 or 20 inches wide, $8\frac{3}{4}$ or 9 inches deep, at 1*s.* or 1*s.* 6*d.*, and make a double-walled hive to take Standard or Association bars. The details of hive-making are so often given, I will not go further into them except to say there are very few neighbourhoods where a cottager cannot find some one ready to show him a good bar-hive and how it is made, if he really wants to know. Then when spring comes he can transfer an old stock into it in the way described in all bee books, or put a swarm in on six sheets of foundation, giving more as that is

worked out. In the autumn, if all has gone well, he will have taken some honey, learnt the management of a bar-hive, and have five or six worked-out bars of combs beyond what his first stock requires to winter on. If he makes two more hives and divides these combs between them, making up each to six bars, with foundation, in the end of September, any neighbour with skeps will be putting them down, and would give him or sell him the bees for 1*s.* a hive if he could either drive or get them driven.

Putting two or three of such lots into each of his new hives, and feeding for two or three weeks, he would have three good stocks at a small cost. I took seven such lots, and put them on two bars of comb, two and three of foundation in the middle of August, and have five good stocks from them. If the first hive was a stock—not a swarm—its owner will most likely have taken 50 lbs. of honey, or have a swarm and some honey; either way it will cover the first outlay thus:

	£	*s.*	*d.*
50 lbs. honey at 7*d.*	1	9	2
Or swarm	0	15	0
25 lbs. honey	0	11	7
	£2	18	9

OUTLAY.

	£	*s.*	*d.*
Three boxes at 1*s.* 6*d.*	0	4	6
Extra wood	0	3	0
Nails	0	1	0
1½ dozen bars in piece at 2*s.* 6*d.*	0	3	3
1½ lbs. foundation at 2*s.* 6*d.*	0	3	3
Two feeders at 1*s.* 6*d.*	0	3	0
40 lbs. sugar at 2½*d.*	0	8	4
Material for quilts	0	1	6
	£1	7	10

STOCK ON HAND.

	£	*s.*	*d.*
Three hives value 4*s.* 6*d.*	0	13	6
Three stocks and combs at 15*s.*	2	5	0
Two feeders	0	3	0
	£3	1	6

I have priced the honey low, as though some may sell for 9*d.* some will only fetch 6*d.*—M. E. E., *Shropshire.*

RIPENESS OF HONEY.

[63.] The quick recurrence of numbers in the new series will, I fear, find those who have many some things else to think of besides bee-keeping sadly in the lurch. But it may not be too late to express the reflection that after all that has been written there is still much to be learned by the fraternity. I am not surprised at the statement that quickly gathered super honey is sometimes found to be unripe, as speedy fermentation indicates. Very likely I could find some myself at the present time in a doubtful condition, though it is well if it stands till this date; but I must confess my wonder at any sealed stores in the hot body hive not standing the test.

There is, then, honey and honey, leaving adulteration, that 'form of competition,' out of the question. But I must add that the granulated honey I have written about did *not* ferment, and I do not think will do so while any other keeps good, so that we must have a test of unripeness far short of fermentation. Of course I accept the dictum of the Editor of the *B. B. J.* to the utmost extent I can. If he is not an authority, who is? and have I not asked his opinion? But has he not a battle to fight over this subject with some of his friends? The new 'Selected Query' system ought to be a most valuable one, and No. 3 is, 'What is the best plan for ripening honey?' Our cottagers are producing great quantities; they want to sell; and if there is any reality about the professions of our Associations they are entitled to prime consideration.

I am going to pass on my *Journal* to two of them, and, poor creatures! what will they make out of the replies to this question? First they will be concerned lest this year their honey should be unripe. Then happily they will see that it may be ripened, but at what a cost of money and labour! They must have a warm room for storage, and are recommended, even when honey is three quarters sealed over, to use galvanised cylinders, paraffine stoves, treacle valves, and what not—no, stay, Mr. Zehetmayr says if the honey is extracted when the bees are only beginning to cover the cells no artificial ripening is needed, and that great authority Mr. Raynor curtly says, 'Leave it in the hive till the bees have sealed it.' 'Who shall decide when doctors disagree?'—SOUTH CORNWALL, *January* 13.

[We feel convinced that our cottagers will continue to leave the honey in the hives until it is ripened and capped by the bees, and they will act wisely in so doing. Our friend may therefore safely send on his *Journals*. Although sealed honey, in an abundant honey-flow, will occasionally granulate, it is rarely the case. Until apiculture shall have arrived at a much greater state of perfection than at present,—indeed, we had almost said, until human nature becomes perfect,—there will always be difference of opinion, even amongst experts (or doctors, if our correspondent will have it so). We need scarcely remind him of the trite saying, '*Quot homines tot sententiæ.*' However, we think there is a very general agreement amongst the 'doctors' in apiculture as to the superior aroma and flavour of honey ripened and sealed in the hive over that scientifically ripened by the human subject. By many apiarists *quantity* is placed before *quality*, and such will continue to extract, and artificially to ripen the unsealed honey.—ED.]

DRYNESS OF HIVES.

[64.] Like 'Amateur Expert,' and many other bee-keepers, I have suffered from dampness in hives, caused by the rain and snow driving in through any crevice made by the sun during a hot summer, more particularly in hives on which fillets are used, on which the snow lodges, and, when a thaw comes, soaks through and causes irreparable damage to the stock. In making new hives I therefore now use wood eleven inches wide, leaving half-an-inch projecting below the floor-board, which I make immoveable. The roof, which is made of wood ⅝ in. thick, overlaps the body of the hive, but instead of being made immovable by the use of ordinary hinges, two pieces of iron are used of the shape seen at Fig. 1, which are 5 in. long and ⅝ in. thick; these are screwed on the inner side of the roof,

Fig. 1.

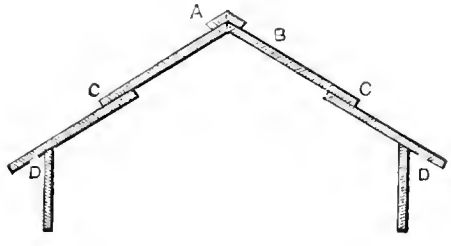

Fig. 2.

leaving 2 in. projecting down, which catches on the hive at A (Fig. 1) by means of a screw inserted in the hive side, and a small block of wood screwed in the opposite side of the body gives us a roof which can be opened as

though we had hinges on, but can be lifted off if necessary, and also does away with the use of a chain, as it keeps itself in position when opened. I should say that this is an idea I had from Mr. Cheshire, but I have never seen it adopted by any hive-maker. The make of the upper part will be readily understood by a glance at Fig. 2. It consists of one piece of wood, 2 in. wide, grooved so as to fit closely down on B. It is then well painted and screwed down while wet; at C the boards overlap each other 1 in., and a groove at D makes a thoroughly waterproof roof that will stand any kind of weather.—J. T. H., *Finchley.*

HIVE COVERS.

[65.] This is evidently an interesting subject by the correspondence it has drawn out. I am much obliged for the readiness our friends have shown to explain means whereby hive-covers may be made waterproof. May I remind them this is not the point in the minds of the Rev. F. G. Jenyns or myself? The question is, cannot the present wood-cover be replaced by another so constructed, of *wood only*, as to be waterproof? I am sure the discussion of the subject will be as acceptable to the hive-makers as to any of us; and if we cannot prove hives cannot be kept dry as now constructed they will alter their present patterns or find some neat and simple means of making them waterproof. I will not shrink from confessing that nothing short of actual compulsion will ever drive me to resort to zinc, felt, Willesden card, calico, &c.; and I may further add, paint laid on *thinly*, but a greater number of coats, always wears better than few coats and thick.—Amateur Expert.

SOME OBSERVATIONS ON HONEY AND POLLEN PRODUCING PLANTS.

[66.] During the past season I have cultivated about 150 species and varieties of native and exotic plants, with a view of ascertaining their respective merits as honey and pollen producing plants; but as the season was unusually hot and dry, the growth of most of the sorts submitted for trial was considerably retarded, and in a few cases entirely prevented. The result of my experiments, with a few exceptions, was very unsatisfactory and incomplete. I shall, however, continue my observations on the same varieties, with a few more additions, and trust the coming summer will be more favourable to the growth of vegetation, which I need not say materially affects the perfect development of the floral capabilities of annuals and perennials especially.

Out of the whole list of what I may call summer flowering plants, borage stands pre-eminent, then come horehound, marjoram, thyme, mignonette, and campanula pyramidalis, the latter during September was well patronised by bees the first half of the day, collecting honey, and totally disregarding the white pollen, which is produced in abundance by this plant.

A common garden weed (Veronica agrestis) afforded in March and April both pollen and honey. Speaking of early spring flowering plants, arabis (white), wallflower, aubrietia, pyrus japonica, willow, are amongst the best, and succeeding these, the myrobella plum is *par excellence*. This valuable shrub continues in flower through March and April, and secretes honey equal if not superior to hawthorn honey; the first blooms open with the crocus, which, however, at first do not appear to produce much honey, but, later on, for six weeks or so in April and May, contribute an unfailing supply of nectar, the flavour of which I opine would satisfy the most fastidious. In my opinion, the myrobella takes precedence of all spring flowering plants for the secretion of honey, and I can unhesitatingly recommend it to all bee-keepers who can conveniently grow it. The thorn acacia is another addition to our bee flora, and should commend itself to those who plant for their bees. It is of rapid growth, commences to flower at an early age, and produces its sweet, white blossoms in July, which claim a considerable portion of the bees' attention. I wish here to thank those gentlemen who kindly forwarded me plants and seeds for trial last year, but it will be seen before I can give any opinion as to their merit or value, I shall have to give them another season's study and observation, which I trust this year will produce better results.—Hy. Dobbie, *Thickthorn, Norwich, January 8th.*

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[1. Special Query.]—If my opinion is of any value I can entirely endorse what Mr. Simmins sends as his answer to Special Query [1]. I have obtained a county silver medal with sections $1\frac{3}{4}$ inches wide, worked without dividers. It cannot be done, unless special care is exercised, with the 2-inch sections, and I think $1\frac{1}{4}$ inch will be found too narrow.—Ashton E. Radcliffe.

[1.] *How do the bees ascertain the presence or absence of the queen in a populous hive?*—(H. P. Jones.) This query appeared in the issue of the 7th of January, to which I notice there has been no reply, and until much greater advances have been made by scientific research in order to gain a more extensive knowledge of the physiology of the occupants of our hives, can a satisfactory answer be given; that there is a means of communication between the occupants one with the other there is not the slightest doubt; but how this is accomplished has puzzled many scientists, some supposing smell, others sight, but by far the most give the preference to touch; until this is satisfactorily determined no one can say how the fact is communicated through the hive that the mother is absent.—W. B. Webster.

[31.]—If my experience is of any benefit to 'C. H.,' I am pleased to place it at his service. During the last few years I have produced a large number of sections of comb honey, and I am glad to say, I have always found a market for them at remunerative prices. Yet at the same time I have to chronicle a graduated table of average prices on a declining scale; and I am sorry to add that my average price for last season, 1885, amounts to only two-thirds the value of five years ago, as 'C. H.' will see by the following: year 1881, average 1*s.* 6*d.*; 1882, average, 1*s.* 4*d.*; 1883, average 1*s.* $2\frac{1}{2}$*d*; 1884, average 1*s.* 1*d.*; 1885, average $11\frac{1}{2}$*d.*, for good colour and good quality glazed sections. I quite expect if we get a good season in 1886, that I shall have to reduce my prices, and that another stock-taking will show a lower average still. Yet, at the same time, I hope (bee-keepers always hope) that we have nearly reached the end of the tether, and that we producers shall not have to accept less than 10*s.* 6*d.*, or at least 10*s.*, per dozen for good quality one pound glazed sections. Our aim in the future must be to increase our out-put, work up as large a retail trade as possible, thereby making a larger profit at less risk than selling to dealers to sell again. Perhaps other bee-keepers will give their averages; and if theirs coincide with my experience, it may give a hint to future authors of bee books, and present authors in new editions, to modify their extravagant quotations of prices realised for comb-honey, viz., their 1*s.* 6*d.* to 2*s.* per pound. That day is gone, and I fear gone for ever, like the 60*s.* to 80*s.* per quarter for wheat. If 'C. H.' wishes to sell his honey and is prepared to take a moderate price, I commend him to the British Honey Company, he will be dealing with a *bona fide* firm, who pay cash, which is a great consideration in these times.—Woodleigh.

[41.] *Rapid Mortality in a Wintering Stock* (Frank M'Donough).—As I have previously said there is much uncertainty in all determinations with regard to disease germs if the examination is made after ordinary putrefaction has set in. This uncertainty can only be overcome by the process of cultivation, for which time is of course required. The bees appear to have been carefully prepared for wintering, and while surrounding stocks similarly treated were doing admirably, this one is dying rapidly. I find the 'box of dead bees' to contain specimens which have certainly not died from starvation. The intestines are full and contain innumerable micrococci in rapid movement. These I *suppose* to be putrefactive only in character, and should not expect to see them in any number in honey bees of the same stock. With the micrococci, however, are many bacilli, almost certainly alvei, which I think are pathogenic or disease organisms, and this idea is strengthened by finding the same in the thorax and also in the brain. One of which I got out in a half dried state and mashed down with a needle-point in water. Nothing can be done now except, perhaps, putting a piece of camphor in a bag and placing it under the chaff-tray, not too close to the bees. Camphor at this period of the year is decidedly beneficial in bacillus diseases, of which I purpose writing hereafter.—F. C.

[42.] *Great Mortality in a Stock of Syrians* (S. L. B.) —The case is very similar to the last, with this difference, that the presence of bacillus disease (*alvei?*) is much more strongly marked. The question as to whether the bacillus is alvei or not is of great interest; and if the correspondent would favour me by sending a few bees direct, such being alive at least at the beginning of the journey, I will make a cultivation and report thereon for the general benefit. Kindly see what is said in reference to camphor.—F. C.

[43.] *Robbing.*—I have generally found a handful of hay or long grass put before the entrance of a hive where there is robbing, effectually prevent it. The hive bees will creep through it, but the robbers funk to do so. It is the same as the tube or tunnel, but more handy.—G. F. Pearson.

[54.] *Moving Hives.*—(B.) They may be moved a few hundred yards with safety this time of year, it will be wise, perhaps, to place a piece of glass against each entrance, so that the bees' attention is called to the changed site as they leave their hives for the first time. If only a few yards, we prefer to cart them to a distance for a few weeks, and then bring them back to their new site.—Amateur Expert.

[54.] *Removing Hives a few Hundred Yards at this Season.*—(B.) Yes. It may be safely done now, but if delayed, only by a yard a-day. Be sure to place a board bush in front of the entrances in the new position, to call the attention of the bees the first time they fly, and ensure their marking the spot.—L.

[54.] *Moving Hives.*—(B.) You need have no hesitation in moving your hives a few hundred yards at the present time in one move, as the bees have now been confined to their hives by cold weather for upwards of a month; this is really the only time of year that bees can be moved such distances with safety. Endeavour to shift them so quietly that not a bee notices any disturbance; this can be done by placing two poles—laced together by cross pieces and padded—under the stand and lifted bodily by two persons *à la* stretcher, if carried steadily—the two carriers being out of step—the combs will not swing.—W. B. Webster.

[55.] *By the exercise of what sense do bees find their queen when she is temporarily lost to them?*—(F. H.) By the foregoing question I judge that it is supposed that the bees and mother bee are not the occupants of a hive but are swarming, as in the event of the mother bee being taken out of a hive, their search for her is usually only limited to the interior and a short distance around the entrance; but in swarming, this search is extended for many yards, and here the sense of smell seems predominantly exercised; this is proved in the circumstance of a mother bee alighting on a certain spot and taking flight again. Bees will congregate on the first and subsequent alighting places for days afterwards. Take a mother bee between your fingers and, after releasing her, present your fingers to a motherless stock, there is at once a sudden hush, and then a tremulous vibration of wings which will gradually extend itself to the bees further removed from your fingers, those nearest commencing to crawl over them, evidently searching for the lost one; here the sense of smell is first exercised, communicated after to the others by that of hearing, but most likely touch or rather a feeling of vibration. Take a mother bee from a swarm and place her in a well-stoppered bottle, being careful not to touch the outside and place the bottle close to swarm, no notice is taken by them of it, but uncork it and place a piece of perforated zinc over the mouth and the bees will instantly congregate around it, but how the few who actually find her communicate the news to the others is a question yet to be determined; that such is done is a certain fact; the vibration of their wings seems to be a method of communication which appears to point to the sense of feeling rather than that of hearing. —W. B. Webster.

[56.] *Feeding.*—(W. P.) Liquefy the honey by water, heat, and feed with bottle feeder on top of hive. But don't you think you had better eat the honey and stimulate in spring with syrup, which is just as good, in fact preferable?—W. B. Webster.

[56.] *Feeding.*—(W. P.) Add water if necessary to reduce it to the consistency of syrup suitable for spring feeding, by stirring both honey and water in a saucepan over the fire until they are well mixed, and give it to the bees in any syrup feeder you may have.—Amateur Expert.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[67.] *Bees coming out.*—What can be wrong with one of my bar-frame hives, the bees are coming out daily, they fly round about once or twice, then light on the snow and can't rise?—John Robb.

[68.] *Mixing Honey and Syrup.*—In the case of a hive having been fed up by syrup, is there any fear when the honey season comes on of the bees mixing the syrup with the honey gathered; also, is the case similar with a hive stored with honey, and fed in the spring with stimulating syrup?—O. P.

[69.] *Removing Syrup.*—Do the bees ever remove syrup from the brood frames in the stock hive and mix it with the honey in the supers? I have a stock of bees in a skep stocked with honey; in the spring it is my intention to invert the skep and place a small bar-frame hive on the top. Now, if I uncap the cells in the skep, will the bees carry the honey into the upper hive, and in this case will it be of service to feed them with stimulating syrup?—O. P.

[70.] *Storing Syrup.*—In stimulating feeding, do not the bees store the syrup, and is not the honey thereby adulterated. Can this be remedied?—O. P.

[71.] *Shading Bees.*—My bees come out and get on the snow when the sun shines, although I shade the

entrance. Will it, during the time the snow is on the ground, injure them to shut them in if I let them have plenty of air?—R. CARTER, *Ullesthorpe.*

[72.] *Excluder zinc under Sections.*—Would some of your readers who have had experience say whether it is really necessary to use zinc under sections? My opinion is that it is a perfect nuisance, and I have made up my mind to use it no more unless I am informed that it does some good. The cost with me is a consideration in the first place, enough for one hive costing 1*s.* 8*d.*, more than the crate of sections cost me. I am not sure, but I think the queen will never go up into sections to do any harm, and I found it so firmly fixed to top of frames as to be almost past removing without jarring the combs very much; besides, it makes the top of frames so dirty with propolis. If no zinc is used, how much room should I leave between top of frames and bottom of sections?—T. JENKINSON.

[73.] *How to prevent Stocks from Swarming more than once.*—I have two stocks in good bar-frame hives to commence with this spring. Now I want to let each swarm once. By this means I hope to have four stocks strong enough to gather honey. What I am thinking of doing is to feed up well in the spring and get them to swarm early, then cut out all queen-cells but one, and give sections at once. If this should be right, what time after the swarm comes off should I cut out the cells, and is it difficult to do? If making artificial swarms would be better, would some of your experienced readers give me plain instructions how to do it successfully, as I am ignorant how to go about it?—T. JENKINSON.

[74.] Will some brother bee-keeper give traits of character of Carniolan bees, and first cross with English bees?—W.

[75.] Please give best known methods of packing sections of honey to ensure safe travelling per rail.—W.

[76.] What is the best height of hives from the ground?—W.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

H. C.—*Adapter for Section-Rack.*—If the rack is properly constructed with separators resting upon the ledges between the rows of sections, no adapter is required, the spaces between the sections themselves forming a barrier to the ascent of the queen. If the rack is not large enough to cover the whole of the frames which you are working, close up the space by strips of carpet.

J. GILBERT.—*Honey.*—The sample of honey forwarded has been gathered late in the season. It has distinct evidence of a mixture of honey-dew with the honey. It does not appear to having been well strained, having a waxy taste.

L. HARRIS.—*Width of Frames for Extracted Honey.*—The frames placed behind the excluder at the back of the brood-nest should be 1¾ inches or 2 inches wide. If you want extracted honey you would only lose space by using sections as you suggest.

J. P.—*Use of Excluder zinc to prevent swarming.*—The objection to the use of excluder is that it confines the drones (if any) and does not always confine the queen; some queens being small enough to get through the holes. A drone-trap fitted to the alighting board would be better than an excluder inside the hive. A piece of excluder over the entrance would not give sufficient exit and would most likely lead to destruction of the stock by suffocation.

T. FISHER.—*Honey granulated.*—The appearance of your honey is very remarkable, we never remember seeing any candy just like this; we can only suggest that as honey varies considerably in density, so this particular sample kept its place separate from the others by the law of gravitation, and so all found its way into one bottle. The caudied portion was evidently gathered from flowers differing from those from which the bulk was gathered. The honey is of excellent quality.

R. K.—*Close-ended Frames.*—The term implies that the side bars are 1⅞ inches wide and thus touch one another, forming, as it were, an inner wall to the hive. When only the top bars are in contact at the ends the term 'wide-shouldered' frames is correct.

INQUIRER.—Put your expected swarm on to six or seven frames of foundation and enclose with dividers. As the combs are built out add other frames. Your query has no reference to 'doubling.'

NIGER.—1. *Hive for working without Supering.*—The number of frames (eight) which you propose to allow in the brood nest is too small, give ten or twelve. Behind the excluder put two or three of the wider frames for extracting purposes. 2. *Bees by Rail.*—As a rule bees are allowed to go by rail, but we believe some lines have certain regulations on the subject. You had better apply to the station-master at the station from which you desire to send them. 3. *Skeps travelling inverted.*—No, the honey does not run out unless the combs get broken down. 4. *Inability to make Frames to hang true.*—We can only suggest want of sufficient skill. Perhaps you are not sufficiently careful to cut all the pieces perfectly square. You must use a frame-block for nailing.

E. H. H.—*Honey-comb Designs.*—Please communicate with Mr. R. M'Nally, Glenluce, N.B.

ERRATUM.—In reply to 'R. J. N.,' p. 32, col. 2, *for* 8¾ inches, *read* 8½.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
WREN & SON, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

BEE & FRUIT FARMING Co., Limited, St. Mary Cray, Kent.
BRITISH HONEY Co., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

BENTON, F., Munich, Germany.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

LYON, F., 94 Harleyford Road, London, S.E.

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Editorial, Notices, &c.

THE PECTEN OR COMB OF THE BEE.

On page 370 of last year's *Journal* we gave a description of this contrivance on the anterior leg of the bee, which is used for cleaning the antennæ; but it has been suggested to us that an illustration would enable our readers to understand it better. We have, therefore, prepared the accompanying illustration (Fig. 3) enlarged direct from the natural object under the microscope. On a small scale, this is shown in Fig. 1, which appears in

Fig. 1.

Professor Cook's *Manual*, and A. I. Root's *A B C of Bee Culture*; but although it has been described by Shuckard, Girdwoyn, and others, both Cook and Root seem to have got into error as to its real use. The legs of bees consist of several joints, see Fig. 2, the first the hip-joint, *g*, being called the

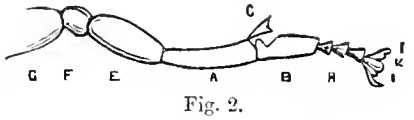


Fig. 2.

coxa; the next, *f*, is called the *trochanter*, which is a short joint between the *coxa* and the next one, *e*, called the *femur*, or thigh; then the *tibia*, *a*, or shank; and, lastly, the *tarsus*, or foot. This last is made up of five joints decreasing in length, the first being as long as all the remaining put together. The large joint, *b*, in the anterior pair of legs being called the *palmæ*, or palms, and in the other legs *plantæ*, or soles; the small joints, *h*, are called the *digiti*, or fingers. The *palmæ* and the *digiti* collectively being called the *tarsus*. The terminal joint is furnished with the claws, *i i*, having both lateral and perpendicular motion; and between these is fixed the *pulvillus*, or cushion, *k*, the action of which has been so beautifully explained by G. Simmermacher and Dr. Rombouts. The middle pair of legs are provided with a moveable spine or spur near the lower inside end of the *tibia*, which does not exist in the posterior legs. This spur is found on the anterior legs (see Fig. 3), also on the *tibia*, *a*, but has an important modification which enables it to perform another function to that for which the central spine is provided. Attached to this spine *c*, is what is called a *velum*, or sail, which is a small angular appendage fixed within the spine by its base. Near the upper end of the *palmæ*, *b*, and opposite to this *velum*, there is a deep curved incision called the *sinus*, terminating with what is known as the *strigilis*, curryeomb, or pecten, so named from the short stiff hairs like the teeth of a comb. This semicircular comb is shown at *d*. The teeth of the comb are all of the same length, but they appear shorter in the drawing from the position of the leg and the perspective view. Upon this opening the *velum* can act at the will of the bee. The object of this apparatus is to keep the antennæ clean. There is one on each of the front legs, the one on the right side being used to clean the right, and the one on the left to clean the left antenna. When a bee wishes to clean it, the antenna is placed into the semicircular *sinus* of the *palma*, and then, pressing the *velum* of the spur upon it, removes, by the combined action of the comb *d* and the *velum c*, all pollen. Bees are constantly seen doing this, and it proves how essential to the well-being of the bee is the condition of its antennæ. Root says that bees use this device for cleaning the tongue, but it is a remarkable fact that the *sinus* and *strigilis* are always adapted in size to the thickness of the antennæ, clearly showing the object of this apparatus. Cook states that other bees do not have it. Shuckard, however, says that all bees are provided with it. We have the anterior legs of a number of bees furnished with it, amongst others those of Colletes, Dasypoda, Megachile, Cilissa, Bombus, Anthophora, Nomada, Xylocopa, and others; and although the shape of the *velum* varies, we have never yet examined a bee without finding the *strigilis*. The *palmæ* are also

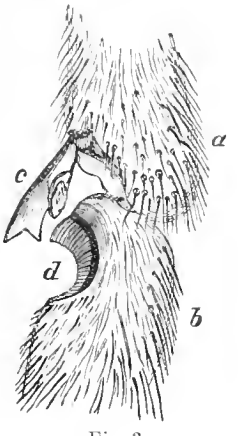


Fig. 3.

provided with stiff bristles, which are used for cleaning the face, bees being frequently seen performing this operation.

The above would have appeared sooner, but has been delayed by the engraving Fig. 3 not satisfying us at first.

USEFUL HINTS.

In consequence of the long-continued cold weather, which for many weeks has afforded no opportunity of a cleansing flight for the bees, we much fear that dysentery will prevail to a far greater extent than has been the case for several years.

Already we have numerous applications for advice under this distressing malady and can only repeat our former suggestions—to keep the bees confined to few combs, in clean hives, with wide entrances, sufficient and proper food and shelter with dry covers, warm wrapping and encouragement to fly on every suitable opportunity.

Food.—With fine weather and strong colonies the demands upon food stores will now rapidly increase. In frame-hives the consumption may be noted by turning aside the quilt and noticing the quantity of sealed honey in the upper and hinder parts of the combs, without further disturbance, or manipulation. A few of these cells, in immediate proximity to the cluster of bees, may be gently uncapped with a sharp knife, or the caps may be slightly bruised, when the bees will at once make use of their contents, and the queen, stimulated thereby, will soon become disposed for ovipositing. Such operations should be performed on mild days only. For kinds and qualities of food see former hints under 'Heddon's Syrup,' 'Good's candy,' 'Frames of honey,' &c. These latter should be placed close to the bees and having a hole—winter passage—cut through the centre, to enable the bees to pass to the outer side without breaking up, or wandering away from the cluster, always remembering that if the weather prove fine, enabling the bees to extend the cluster and to fly freely, food will be rapidly consumed, and the early gathered pollen will stimulate to breeding and to further demands on the stores.

Clearing Entrances.—When the weather is sufficiently mild to cause free flights, the apiarist, carefully noting any hives from which the bees are not flying, should thoroughly clear the entrances of such hives from dead bees and débris with a long piece of stout wire hooked at the end.

If the dead are numerous, examination from above must be made by turning aside the quilt to ascertain whether the colony be alive or dead.

Very weak colonies should be confined by division-boards to small space, if only to preserve the queens, which may prove most useful on the general spring examination—soon to take place—where queens have perished during the winter. Where upward ventilation is practised, a supply of water may be useful to strong colonies which are breeding freely. This may be given, sweetened with a little sugar, by means of a sponge placed over the feeding-hole and covered by a tumbler, or underneath the quilt. Where the loose floor-boards are used it may be advisable, after the long frost and snow, to change them for dry ones and so to clear away all dead bees and refuse with the least possible disturbance.

Stimulation,—to any great extent, is to be deprecated at present. The time and method we shall hope to notify in future hints. Our own view is, that the middle of April is soon enough, and that it should be practised together with brood spreading, to a small extent, and with the equalisation of colonies. Too early stimulation results in greater loss than gain from enticing forth bees to perish in the search of coveted sweets and farina.

Small Colonies.—Wherever an attempt has been made to winter small colonies, unless extremely well protected, we fear the result will prove disastrous. In very cold winters small after-swarms usually perish more from lack of heat than want of food. We are wintering some half-a-dozen nuclei of three and four frames each, with young queens, chiefly Carniolan, fecundated as late as the middle of October. On the approach of severe cold in November, we removed these nuclei into a spare out-house, warm and dry, with a southerly aspect, and on mild, sunny days, place them out-of-doors for an hour or two, encouraging thereby to a cleansing flight. Three of these are now breeding freely, and all exhibit signs of perfect health. From their late fecundation, when none but Carniolan drones were flying, we anticipate pure fertilisation, and shall hope further to prove the qualities of these 'ladies' bees.'

Things-in-General.—*Indian and Colonial Exhibition.* The *American Apiculturist*, in its 'Notes and Queries,' in this month's issue, takes us to task for having, in 'Useful Hints,' expressed a hope that 'our American cousins would abstain from sending glucose, with a piece of comb-honey floating in its centre,' to the above Exhibition at South Kensington, at which Canadians had expressed an intention of making a large display of their produce. The *Apiculturist* asks, 'Is it right or just to leave the public to suppose that on this side of the water bee-keepers *do* place such a mixture on the market?' As we yet have to learn of the practice of adulteration by the honey-producers of America, we must protest against any statement that would seem to convey the idea that they *do* practise adulteration.' Whether American apiculturists, or '*producers*,' as our contemporary is pleased to call them, are the guilty parties, we know not, but it is a fact, acknowledged on all hands, that our markets have been plentifully supplied from America with the so-called honey to which we made allusion. Their own Journals have repeatedly contained far stronger condemnation of adulterated American honey than the Journals of this country. Witness, for instance, the following from the *American Bee Journal*, taken from a letter of Mr. C. F. Muth: 'It is surprising that a common swindle, as practised by New York and Chicago honey-dealers, of putting a piece of honey-comb in a glass jar, and pouring over it pure glucose, could last so long.' And Mr. Muth goes on to state that, 'after analysation, it was found that the comb was the only pure honey in the jar, and that the liquid was *pure glucose*, which had partaken of the flavour of the comb-honey.' In our provincial towns we have seen shop-windows filled with this imported stuff; and Mr. Hehner, Honorary Secretary of the Society of Public Analysts, and Analyst of the B.B.K.A., states that, 'Out of nine samples of American honey purchased from retail dealers in England, seven were adulterated, while out of twenty-six samples of English honey, purchased in a similar manner, twenty-four were genuine, and the other two (adulterated with corn syrup) he had good reason to believe were of American origin.' Let our contemporary, then, answer the question, 'Is there not a cause?' Our remarks were in no way intended to prejudice the colonial produce, but our market for pure English honey has suffered so much from adulterated imported honey that we must maintain our position. Our Canadian friends may rest assured that a hearty welcome awaits them here, and that we have room for all those fine qualities of honey for which they are so justly celebrated.

Upward Ventilation.—We were pleased to see the remarks of our old friend Mr. Pennell on this subject in connexion with enamel-cloth (No. 187, p. 28), which are very much to the point, and re-echo our own views. Dr. G. L. Tinker, a great American authority, in an

excellent paper on 'The Hibernation of Bees,' published in the *American Bee Journal* of January 6th, remarks, 'Somehow I am becoming impressed with the idea that a great part of our wintering troubles comes from upward ventilation in hives. The great success of Mr. Barber in wintering may be due to the fact that he gives his bees no top ventilation.' His views on 'hibernation,' and the proper winter temperature of hives, are striking, and worthy of a perusal by all apiarists.

Reversible Frames again.—Mr. Demaree, another American apiarist, of equal standing with Mr. Heddon, in the same Number of the *A. B. J.* as the above, utters a note of warning on this subject thus: 'I want to say a word about the utility of reversible frames. This idea is likely to be pushed as never before—patent interests will push it regardless of its real merits. Experience of years, with a thorough knowledge of practical mechanics, may not weigh much with some people, but my advice to *beginners* is, Don't be caught in the trap. Let me prophesy that when the great "blow" is over, the thousands of reversible frames that are now being pushed into use, will stand *unreversed*.' *Festina lente* is a good motto, especially for the inexperienced. By the way, could not the system be tried in the future 'Bligh Competition?'

INTRODUCTION OF QUEENS.—MR. SIMMINS' METHOD.

The introduction of queens has ever been a critical operation with bee-keepers, and numerous have been the methods recommended. Amongst those bee-masters who have devoted much of their time and attention to the study of this special branch of bee-culture, may be mentioned Mr. Simmins, many of whose contributions to bee-literature have from time to time appeared in our columns. Such has been Mr. Simmins' success in the safe insertion of queens that he was induced to give the result of his experience in a pamphlet, entitled *Simmins' Method of Direct Introduction*. This pamphlet has been in the hands of the public now for some years, and his further experience enables him to speak with still greater assurance of the success of his methods, provided his directions are implicitly followed. His first method, we believe, has never been given before, though it embodies some of the principles contained in his pamphlet. The chief point of this method is that the queen must be kept alone and without food previous to insertion. For the benefit of those who may be interested in this matter, we append his two methods:—

First Method.*—Upon receipt of queen, go to the hive and remove that one to be superseded (or otherwise). At dusk, take the new queen *quite alone!* after keeping her so for not less than thirty minutes previously, but quite warm, and, moreover, without food meanwhile; lift quilt at one corner, drive bees back with very little smoke, and then permit the queen to run down. Close the hive, and make no examination until after forty-eight hours. Leave the operation until so late that a lamp is necessary.

Second Method.†—When queen is received, at once make up a nucleus to receive her, thus: From a strong colony take one frame of hatching brood, with adhering bees, and place in a nucleus hive, say 14½ in. by 4¾ in. by 9 in. deep inside; then shake off most of the bees from another comb into such small hive, and on either side of the one containing brood place one comb of honey; close entrance with perforated zinc, and place on top a sheet of straining-cloth, tacked to a simple frame. Thus securely confined, and having ample ventilation, they are to be taken into a warm, dark room. In a few minutes, finding themselves confined and queenless, a great uproar will be heard; now slide frame of strainer cloth just off one corner and let queen run in, keeping bees back with little smoke, if necessary. Close again, and let them remain indoors until the third day, when stand out where desired. After a day or two, give another frame of hatching-brood, which repeat at intervals of seven days, or as often as they appear able to cover more combs, until well established.

In our next number we propose to give Mr. Frank Benton's method of queen-introduction.

* In case of a queen that has travelled this process of quarantine removes any scent she may have contracted while confined with other bees.

† By this means the bees are reduced to the same condition as the recently-confined queen.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION CONVERSAZIONE.

(*Continued from p. 35.*)

In the absence of Mr. W. J. Green of Sudbury, the following paper on 'Clark's Climax Hive,' and on 'Smoking Bees,' was read by Mr. Henderson:—

Gentlemen,—Seeing that a meeting of the British Bee-keepers' Association is to be held on January 20th, I thought it desirable to make a statement respecting Clark's 'Climax' Bee Hive, which does away with the necessity of smoking bees.

It is possible that some might say, Why should I go to any expense in the matter?—the smoking is not much trouble. Perhaps so; yet it is some, and when the matter is thoroughly thought out I think that no one can deny that it would be much more merciful to the bees if it could be dispensed with. For what does smoking mean if not semi-suffocation, and seeing the number of times it has to be endured, how far does it, in the total, fall short of the punishment inflicted by burning, or actually total suffocation—which is what the burning amounts to? I will not trouble you with any further enlargement on the subject, but will at once proceed with the diary I kept of manipulations performed without smoke.

On September 16th, about six p.m., went to have a look at a hive of my own in a gentleman's garden. It was a middling strong June swarm, and I wanted to give them some candy, but having previously attended to another, smoker was out. I opened hive and could see through glass dummy that there was no food in end frame. I then ventured to pull up quilt (I was dubious about the matter), but the bees did not seem angry at it. I proceeded to examine them, and took out a few that had not many bees on them and found honey sealed in centre. I placed them at the back of hive and took out a few more of extreme front ones, placed them with them and stood a few on the ground leaning against legs of hive; as there were a few cappings at the bottom and I had room I proceeded to clean them out with a small piece of square tin lying by and a wing I had with me.

I was very much surprised, as I had not smoked the bees, to find them so quiet, none of them attempting to sting; but as it was getting towards evening there were many crawling about me, but all good-tempered, moving their bodies up and down in the usual way. After I had cleaned out front part, moved back frames to front, and cleaned remainder out, then replaced all the frames and made secure with dummies and quilts and left them, rather pleased and very much surprised at their taking it so quietly.

I thought over it next day, and as I had made arrangements with the gentleman where they were to clean out one of his hives for him next day, resolved to try them without smoke. I did so, and this time I had made preparations for taking out all the frames, that is to say, found up an old box about 18 inches wide which would catch arms and allow bottom of frames to drop in box. I began by taking off the quilt as on previous day, and then took out all the frames one by one and placed them

in the box, the bees all perfectly quiet. The frames being so easy to move, no propolising, and they were entirely unconnected, save that the bees on adjoining frames cling to each other and must of necessity be separated, but as I did this without any jar or shaking it did not affect them in the least, and they were very soon all in the box, and I cleaned and freed the hive from wax-moth, &c., and then put the frames with bees all back again and covered up everything snug and left them, very much pleased with continued success without smoke, and as this was also late in the day resolved to try another one in the middle of the day.

Sept. 21, 1.30 p.m.—Proceeded with another of my hives in another garden and had a box as before to receive frames. Opened hive, took off quilt as before, took all frames out of hive, and replaced them as in preceding cases. No smoke, and not in the least angry; they flew about more as it was quite the middle of the day, but all were good-tempered, not one of them attempting to sting. Must say I was very much pleased at continued success, and now felt sure that the cruel practice of smoking was quite unnecessary. There were two more hives I wanted to look at close to this one; they were bees I had driven about a month before, and had been feeding them up with honey, and some syrup, and candy, also broken comb containing bee-bread. I did both of these on the evening of the 23rd. These bees came from a different part, and had the character of being angry bees, so much so that they would occasionally sting passers-by, and I must say that they were more lively. I had gloves and a veil on, but not one tried to sting my gloves, one did crawl up my trousers and stung me in the leg; this would not have happened in the middle of the day, as they will not then remain on the ground, consequently no danger to one's legs, but with this exception all went well. I emptied them both and found them going on well; they had pulled out foundation and had sealed up the honey; syrup, of course, was not so. The old comb that was in the bottom, which I had given them to pick over, I cleaned out and put them back and covered up, leaving them all right and snug, as before stated all without smoke.

Sept. 25.—Examined three more similar hives standing in another garden (without smoke), took out some empty frames and closed up; no trouble with them, a few flew about, but not one of them attempted to sting.

Sept. 26.—Went to a gentleman to set a hive right. I had tried twice before to do so with smoke and had failed, this was before I found out how to do without smoke; this time intended to try without smoke. If not trespassing too much on your space, which I am afraid I have already done, I should like to give you an account of these manipulations, if so they can be called. On the first occasion I took off section crates, smoking them first, and took a frame or two of honey away, but owing to their irritability (savageness, in fact), for they literally covered my gloves, I had quite a dozen stings on one finger through the glove, and half a dozen up my arm, I was compelled to throw the quilt over them and leave them. Later on, perhaps a fortnight, I had another try at them, smoking them first, but I had no sooner taken the quilt off than, just as before, they literally covered my gloves trying to sting; they were common leather gloves, but as they were dry and hard did not penetrate. Used the smoke to them, but it was no good, they would not be driven down, they buzzed about from place to place, and in a second or two after as soon as I tried to get the frames right they were on to me again, and in pure mercy to them, for there were numbers of them twisting round and round or dragging and pulling and leaving their stings in my gloves, I covered them up again, and in despair at the time could see no better way of dealing with them than destroying and taking the honey, but, of course, as they were not mine could not do so without first consulting the owner, and intended the first opportunity to advise him to do so. I may here mention that this lot bore a very bad character with those who had previously managed them, and just before myself some one else, a friend of the owner, put on the crates and had attempted to do something with the frames, but he did not succeed in leaving them right, consequently they had free access in the roof, built enlarged combs, and in his flurry he put the crates on wrong, and, I was told, was stung very much and would not have anything more to do with them. I may say that in my own mind I had decided that this hive should be a crucial test of the system of working without smoke, and I now without any smoke set to work and took off the quilts; they came out in pretty good numbers (I had a veil and gloves on) and were very busy flying round my head. I had a good look at all the frames. The reason I could not close them up was that during the time that had elapsed, or prior, they had enlarged comb so that frames could not be put close.

I took this frame out, sweeping the bees off with a small wing and closed up the other frames, took out the glass dummy, placing wooden dummy in its place; very few bees during whole operation alighted on my gloves, and only one attempted to sting. I put the quilts on again and finished by putting on an extra one for the winter, thus doing with comparative ease without smoke what I was utterly unable to do with it.

I may also add that before I had anything to do with them, a friend of the owner—a bee-keeper himself—had attempted to examine them before he put on the sections, using as usual a little smoke; but they turned up so angry that he could not properly close up the frames. He managed to put one crate on, but in his flurry that was put on wrong, so that the other would not fit when I afterwards tried to put it on, and I was told he was very glad to get away from them, and would have no more to do with them—all through the smoke, which in these 'Climax' hives is not required, the frames being diamond-shape; as soon as the quilt is removed they are fully exposed to both light and air, and being thus they very soon become perfectly manageable, and the longer the job lasts the quieter they are.

The question may arise in some one's mind as to how I know it is the light and air that quiet them. It is in this manner: if a frame is taken out of the hive, we will say, quickly, with the bees all lively on it, and it is stood down somewhere, the bees on it will soon be quiet. There is no other influence at work, so it must be that. Again, if in these same hives ('Climax') you attempt to do anything with them, by means of removing dummy at the end, without taking off the quilts, they will not allow you to do it quietly, but rush out from inside on to any strange substance, be it hand or anything else. They are not in this manner exposed to light and air fully. The internal part is darkened as much as the lower part of a skep or bar-frame hive would be; but take off the quilt, and conditions are immediately altered, and with such conditions the temper of the bees.

The Chairman invited the members to examine the hive, which seemed to him very much like an Anglo-Cyprian hive.

Mr. Hooker and Mr. Baldwin could not discover that this hive possessed advantages over any other, the manipulation of the bees being subject to the usual rules.

Mr. Sambels thought it was a pity Mr. Green was not present. It was pretty well known that when the bees were fully gorged they were quiet—at all events sufficiently quiet to permit of manipulation with the help of veil and gloves. All of them knew that if the quilts were removed and the bees exposed to the light they would go and gorge, after which they were as easy of manipulation as if smoke had been used.

Mr. Blow thought the idea of the hive in question had been suggested by an illustration of an Anglo-Cyprian hive, which appeared in the columns of the *Bee Journal* about three years ago. It was a hive entirely suited for supering purposes. The supering space would be two or three times as great as in a bar-frame hive. It was not a new thing to manipulate without smoke. Several eminent bee-keepers always manipulate without smoke —Mr. Raynor for instance. He did not think that hive would secure them immunity from stinging any more than bar-frame hives. He was also of opinion that the entrance was in the wrong place, owing to which fact the bees were not properly protected from sun and winds.

Mr. Hooker said with regard to Mr. Raynor dispensing with smoke, that gentleman always used dilute carbolic acid, which had just the same effect as smoke.

Mr. Baldwin could not see that this hive had advantages over others, for in manipulating with it the whole of the top would have to be exposed, and in fact a much greater surface than with an ordinary hive. Mr. Green evidently had no confidence in it, because he resorted to his gloves and veil. He thought the evidence in favour of this hive could not be regarded as conclusive simply because Mr. Green's plan had perhaps succeeded once or twice. He knew that Italian bees might sometimes be handled without carbolic acid or smoke, but it did not follow that that could be done always because it had been been done once in a way.

At this point Mr. Hooker took the chair, Mr. Glennie being compelled to leave, and stated that he thought the general opinion was that this hive was in no way superior to others in use. He regretted Mr. Green's absence, who might have thrown more light on the subject.

Mr. Sambels said he would like to hear the opinion of the members on a question which had recently been asked by Mr. Jones and another correspondent in the columns of the *Bee Journal*, namely, how bees ascertain the absence of their queen.

Mr. Baldwin said that one might as well ask how the bees knew the queen was the queen. If they gave them credit for being able to recognise the queen he thought they might also give them credit for knowing whether the queen was present or not. Those bees immediately in the neighbourhood of the queen would instantly ascertain this and transmit the intelligence to the others.

Mr. Stewart was of the same opinion.

Mr. Grimshaw and Mr. Baldwin agreed that the queen emitted a strong odour, and possible the absence of that odour in the hive would be immediately detected by the other bees.

Mr. Garratt thought this fact was established by the circumstance that if the queen alighted on a place and moved away again out of sight, the bees would immediately cluster on that particular spot, and it was difficult to get them away. Sir John Lubbock had suggested that bees were deaf: but he thought there was no conclusive evidence on that point.

Mr. Zehetmayr had removed frames out and put them in a box and shut them up for half an hour without the queen. The bees soon after commenced fighting.

The conversation on this subject was continued for a considerable time, the chairman, Messrs. Baldwin, Zehetmayr, Garratt, Grimshaw, and Stewart, taking part therein. Some of the speakers thought that humming probably played an important part in the matter, because the humming sounds varied according to circumstances. The question as to how the humming was produced was also discussed, some submitting that the sounds were vibratory, and others that they were vocal. It was suggested at the same time that the difference in the sounds depended on the position of the cells, and whether they were emitted in a cell or not. It was generally considered that Sir John Lubbock's experiments were not sufficiently conclusive to justify them in coming to the opinion that bees were unable to hear.

The Chairman invited Mr. Grimshaw to write a paper on the origin of the humming sounds, discussing the question as to whether they are vibratory or vocal, which Mr. Grimshaw kindly consented to do.

Mr. Henderson proposed and Mr. Garratt seconded a vote of thanks to the gentlemen who had been good enough to provide subjects for that evening's discussion, which resolution was briefly acknowledged by Mr. Grimshaw.

The proceedings terminated with a vote of thanks to the chairman, proposed by Mr. Garratt and seconded by Mr. Stewart.

DEVON AND EXETER BEE-KEEPERS' ASSOCIATION.

On Friday, January 22nd, the tenth annual meeting of the Devon and Exeter Bee-keepers' Association was held at the Guildhall, when there were present the Right Worshipful the Mayor (R. R. M. Daw, Esq.), the Sheriff (R. Ley, Esq.), Mr. W. Horton Ellis (president), the Rev. J. G. Dangar (hon. secretary), the Rev. J. Dickinson, the Rev. P. Williams, and Messrs. J. Thacker, R. P. Kitson (Torquay), J. H. Dangar, Pickings, and Cowan, Mr. and Miss Bale, and Mrs. Roberts.

The report stated that satisfactory progress had been made during the past year. An inspection of members' apiaries had been made by Mr. Baldwin, the Expert-in-Chief of the British Bee-keepers' Association, assisted by Captain Heysham, R.N. The Plymouth Show was held in connexion with the Devon Agricultural Society in May. The Tavistock Show was held on August 12th, which was the county show of the year. The report expressed the regret of the Council that Mr. Griffin is unable any longer to discharge the duties of an honorary secretary of this Society in consequence of the fact that he is now non-resident in the county of Devon, but he has consented to act on the executive as a member of the Council. 'Mr. Griffin's work as a bee-master, and his past services—to this Society in particular—in the cause of bee-keeping are so well known as hardly to need comment; but the Council cannot allow him to resign without testifying to the zeal, ability, and genuine *esprit de corps* which have always animated him in the discharge of his honorary duties.' They have further to report with sincere regret that Captain Heysham's health necessitates his leaving the West of England for a more suitable climate.

The balance-sheet showed that at the beginning of the year there was a balance in hand of 6*l.* 3*s.* 10*d.*, whereas at the end of 1885 there was a balance in their favour of 5*3l.* 13*s.* 10*d.* This, however, would be reduced by an outstanding liability to about 28*l.* The report was adopted.

It was moved and carried that Mr. Griffin and Captain Heysham should be made life members in recognition of their valuable services in the past to the Association. Mr. W. Horton Ellis was elected president with the following as vice-presidents:—The Mayor and Sheriff of Exeter, Lord Clinton, Viscountess Chetwynd, Lady Anna Maria Courtenay, and such members of Parliament for the borough and divisions of the counties as might consent to act.

The Council for the ensuing year was elected as follows:—The Rev. J. Bartlett, Mr. W. N. Griffin, Mr. P. R. Kitson, Admiral Moorman, Mr. J. Thacker, the Rev. P. Williams, the Rev. J. G. Dangar, and the Rev. J. Dickinson, with the Rev. J. G. Dangar and Mr. Griffin as the representatives to the British Bee-keepers' Association. The following were appointed local representatives:—The Rev. M. L. Gooby, Park View, Buckfastleigh; the Rev. J. R. Powell, Buckland Filleigh, Highampton; the Rev. F. T. Salmon, Gittisham Rectory, Honiton; the Rev. F. Gilbert White, Lewsdown Vicar-

age, Ashburton; the Rev. J. B. Williams, Blackborough House, Cullompton; Mr. P. R. Kitson, Torquay; Mr. W. Hodgson, Colaton Raleigh, Ottery St. Mary; Mr. J. Parkhouse, Kingsbridge; and Mr. W. S. Spearman, George Street, Plymouth.

MIDDLESEX BEE-KEEPERS' ASSOCIATION.

The annual meeting of members took place at 105 Jermyn Street, on Friday last, January 29th. The Hon. and Rev. Henry Bligh presided; and there were present Messrs. Leach, Tatham, Zehetmayr, Jonas, Bedford, Neighbour, Rose, Henderson, Griffiths, and others. The report of Committee and the Treasurer's account were read and adopted. From the former it appeared that the Association has made satisfactory progress during the last twelve months, and that the list of members showed a net gain in that time of eighty-nine. The expert had made tours of the county both in spring and autumn. Bee tents had been provided at several flower-shows, and there had also been got together good exhibitions of honey, &c., at Ealing, Finchley, Harefield, Hanworth, Hampton Hill, and other places. It is proposed to send the expert again in the spring and also in the autumn of 1886, and the Committee are arranging for several lectures on practical bee-keeping to be given at various places early in the spring. The statement of accounts showed receipts amounting to 54*l.* 7*s.*, against an expenditure of 40*l.* 13*s.* 4*d.*, leaving a balance of cash in hand 13*l.* 13*s.* 8*d.*

The cordial thanks of the members were voted to the Committee and retiring officers, also to the Royal Society for the Prevention of Cruelty to Animals for their kindness in allowing the use of their Board-room for this meeting and for Committee meetings. The Officers and Committee for 1886 having been elected, and representatives to the Conferences of the B.B.K.A. duly appointed, the business of the evening was brought to a close by the unanimous passing of a vote of thanks to the chairman.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

The annual general meeting of this Association took place on Saturday, January 31st, in the Mayor's Parlour, Old Town Hall, Leicester. The attendance was rather sparse, owing probably to the stormy weather; there were present:—Vice-President, K. K. B. De-la-Bere; Messrs. Carter, Walker, Foxon, Meadows, Pridmore, Bryan, Clark, Ward, Saunders, Marriott; Miss Taylor; Mrs. Ball; and the Secretary. Vice-President, K. K. B. De-la-Bere, took the Chair. The Report was adopted, and a discussion followed on 'the ways and means of paying the balance due to Treasurer;' as a means to this end it was proposed by Mr. Meadows and seconded by Mr. J. E. Saunders, 'That the Council of the Leicestershire Agricultural Society be asked to receive a deputation of two and the Secretary from the Leicestershire Bee-keepers' Association, for the purpose of submitting for their consideration a proposal to add to their annual exhibition a bee-department, as at the Royal Lincolnshire and other Agricultural Associations; and to offer prizes for bees, honey, hives, &c., and to give demonstrations in Bee-management with practical lectures;' which was carried, and selection of deputies left to the Committee.

It was also proposed by K. K. B. De-la-Bere, Esq., and seconded by Mr. Marriott, 'That the Secretary apply for subscriptions to the nobility and gentry of Leicestershire.' Carried.

The election of the Committee was then proceeded with; the following members of the late Committee being retained:—Messrs. Carter, Walker, W. S. Pridmore, L. Fosbrooke, Johnson, Ward, Rev. J. Bird, Rev. Canon Willes, J. E. Saunders; and the following new members added:—Messrs. Foxon, Meadows, K. K. B. De-la-Bere, and Marriott. The Secretary and Treasurer were re-elected.

It was also proposed by Mr. Meadows, and seconded by Mr. Carter, 'That Local Secretaries be appointed to assist the Hon. Secretary and make quarterly returns of their work.' Carried. Mr. Meadows then offered to act, and it was arranged that Mr. Felstead, of Remstone, Mr. Drake, of Lutterworth, and Mr. T. W. Goddard, of Donnington-le-heath, be asked.

A suggestion that a Conversazione be held in Leicester in May was taken into consideration, and it was proposed by Mr. Carter, and seconded by Mr. Pridmore, 'That the Conversazione be held on the first Saturday in May.' Carried.

The Vice-President was obliged to leave at this stage of the business, and Mr. Walter S. Pridmore was voted to the Chair.

Mr. W. P. Meadows and the Secretary were then appointed representatives of the Association at the quarterly meetings of the B. B. K. A.

A gratuity of three guineas and a hearty vote of thanks were accorded to the Secretary; and after fixing March 13th for the next Committee Meeting, the meeting closed with usual votes of thanks.

BUCKINGHAMSHIRE BEE-KEEPERS' ASSOCIATION.

The annual general meeting was held at the 'George' Hotel, Aylesbury, on Thursday last, J. E. Bartlett, Esq., in the chair. The annual report of the Committee was submitted to the general meeting and unanimously adopted. The balance-sheet for the past year was also presented and passed. It is satisfactory to find that the Association is in a better financial position than it was a year ago.

The following gentlemen were appointed as the County Representatives to attend the Quarterly Conferences held in London, viz., the Rev. E. Clay and Mr. R. King. In the event of either of these gentlemen ceasing to act, the Rev. A. Newcombe or the Rev. J. Hill was appointed to fill the vacancy.

Upon the motion of the Rev. E. Clay, seconded by Mr. Pelley, the following additional rule was passed unanimously:—'That no alteration of the above rules shall take place excepting at a general meeting; and notice of such proposed alteration shall be given to the County Secretaries twenty-eight days previous to such general meeting.'

Cordial votes of thanks were passed to the President, Vice-presidents, and officers of the Association, and they were requested to continue to serve during 1886. The names of Viscount Curzon, M.P., and J. E. Bartlett, Esq., were added to the list of Vice-presidents.

A vote of thanks to the Chairman brought the meeting to a close, and subsequently the annual prize-hive drawing took place amongst those members whose subscriptions for 1886 had been received. The winners proved to be (1) the Rev. A. Barrow, Fenny Stratford; (2) Mr. J. Pollard, Tingewick; (3) Mr. W. Lowndes, Chesham.

A BEE-KEEPERS' ASSOCIATION FOR GLAMORGANSHIRE.

About the end of October, or early in November of last year, I wrote Mr. Huckle respecting the formation of an Association of Bee-keepers for this county. Mr. Huckle suggested that when about forty promises had been obtained from persons interested in the cause, and from various parts of the county, to call a general meeting and appoint a committee, &c. I followed this suggestion, and issued circular letters to as many of the bee-keepers of Glamorganshire as I could obtain the names and addresses.

Mr. Muir, of Margam, also kindly called attention to the matter in his notes published in two papers in the county. Then Mr. Davies, of Aberdare, wrote in your issue of December 15. That the subject is fully ripe and the county prepared for such an Association is shown very clearly by the numerous promises received, and the general expression of pleasure that a Society is to be started. Our first meeting is fixed for Thursday, Jan. 28th, at 2.15 p.m., in the Council Chamber, Town Hall, Neath (Neath is considered the most central). No doubt there are many bee-keepers in the county who know nothing about the effort being made to start the Association; it is therefore earnestly hoped every one interested in the cause will do what they can to spread the news, and make the first general meeting at Neath a thorough success.—E. THORNTON, *Hon. Sec. Bridgend Horticultural Society.*

[We regret that, through an oversight, the appearance of the above letter has been delayed. We have for a long time been anxious that an effective Association should be established for Glamorganshire, and we hope that the meeting on the 28th ult. was a great success. We shall be pleased to hear the result of the meeting. We feel assured there is no lack of earnest bee-keepers in the county. It only requires an earnest secretary to bring the scattered forces together.—ED.]

Selected Query.

[77.]—*Can you prevent swarms from issuing? if so how do you prevent them?*

In certain cases it is nearly impossible, especially when the weather is warm, and there is no large amount of honey to be gathered, as between the early and later gluts; I give plenty of room, put on sections, and cut one wing of the queen, looking in the hive every ten days or fortnight, to see that the queen is still in the hive, as on one occasion I found that she had crawled out of the hive, and been lost.—G. WALKER.

Not always, but to a great extent, say 80 per cent, by increasing size of hive and super space.—R. M'NALLY.

In my experience, natural swarming should not be prevented. I have successfully practised Heddon's system, which gratifies the natural instinct of the bee for swarming, while it prevents increase in the number of colonies, if desired, and affords an abundant honey yield, especially if comb-honey be the object aimed at. There are two ways in which swarming may, to a great extent, be prevented (*a*) by the storifying system, and (*b*) by dividing colonies. The former by doubling and redoubling when working for extracted honey. The latter by division and subdivision, if necessary; and, if increase be not desired, by uniting into large colonies in the autumn, reserving only the young queens. In this case the harvest reaped will be extracted honey taken from the back, or sides of the brood-nest.—G. RAYNOR.

By pursuing the following plan I have effectually prevented my bees from swarming for the last three years. I use long Combination hives, give abundance of ventilation and room, extract outside combs before they are completely sealed, and replacing them in brood-nest. Queen-cells *nil*, or only embryo ones, consequently no need of cutting them out. Four important factors in the prevention of swarming are (in order of precedence) Combination hives, extractor, ventilation, and room.—HENRY DOBBIE.

Not absolutely. Much depends on the breeding proclivities of the queen. The nuisance may be reduced to a minimum by careful and watchful management. There is no royal road to prevention. Excising queen-cells I do not recommend, far better let them swarm and work the swarms à *la Simmins* when once they have taken the swarming mania.—AMATEUR EXPERT.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PLANTS FLOWERING IN FEBRUARY.

[78.]—The following plants may be expected to flower in February:—Wallflower, aconites, crocus, iberis, hazel, daphne, pyrus japonica, snowdrop, and furze. For difference of latitude an allowance of two to four weeks must be added between southern England and the north of Scotland.—H. DOBBIE, *Norwich.*

PRODUCTION OF WAX.

[79.]—For several years past I have been under the impression that bee-keepers were using comb foundation in many instances at a serious loss to themselves. Hitherto I have refrained from giving expression to my ideas upon the subject, considering that the matter would not be favourably received by the bee-keeping public. Our worthy editor has opened the way for discussion, and it is to be hoped that the whole thing will now be thoroughly sifted.

Year by year, though increasing more largely each season, I have used less foundation in the brood-chamber, while next season my consumption of that article for stock purposes will be almost *nil*.

Swarms returned on the original stand upon one or two (more should never be given) combs of brood, and the rest foundation, have done no better for me—and in some cases worse—than others which had starters only, instead of foundation.

Where the harvest is over, as it is in many places, by the end of July, all swarms should be returned on the parent stand with ½" starters only, instead of full sheets of foundation; besides the one or two combs of brood, which latter will keep the queen below. In this case, instead of producing an excess of brood, the labour representing the food and attention required for the same, will of necessity be devoted to the surplus storage.

As the result of the closest observation I will state plainly, that in all districts where the honey season is of short duration, every pound of foundation used in the brood chamber after June 10th causes the bee-keeper a loss of not only ninepence, as mentioned by Mr. Sharp, p. 28, vol. xiv., but of ten times its actual value—and why? In such localities all swarming should be over by that date, whether natural or artificial, if every colony is expected to give a good result in surplus honey; and by then (if earlier the better) every stock should have its full complement of brood, on a limited number of combs. With the sections properly manipulated the brood-nest remains thus compact throughout the season, except that towards the latter part it is somewhat reduced (as it should be) by the accumulation of pollen and some little honey. Given this condition, and let the bee-keeper add but one sheet of foundation in the brood-nest, when the proper balance of population is at once overthrown, and the harvest is reduced by that amount of honey represented in feeding an extra 5000 young bees twice over, which are too late to become anything but consumers; and worse than that, there is the lost labour of those adult bees tending them, which otherwise would have

been adding to the surplus. Who shall say how many times its value that single sheet of foundation applied at the wrong time, has cost the owner?

Where one wishes to work for increase only this rule may not apply; each must judge as to what are his own requirements. It is a question, after all, whether such increase of colonies may not cost more than their worth, when it is remembered that a moderate rate of extension with less brood to feed and care for, would afford at least one hundred per cent in cash returns over and above the value of extra increase.

I have endeavoured to show how by setting a proper limit upon the use of foundation, we are taking the first great step towards the production of wax at a profit to ourselves; but there are other ways in which wax may be saved, such as I now enumerate. I do not suppose there is a single bee-keeper who does not save the cappings when extracting: but are there many who save that surplus wax which otherwise the bees waste, when reducing the combs in spring from storage thickness to the correct dimensions for receiving worker-brood? Very few there are who have realised the amount of wax lost to themselves in this way. All empty combs stored away for winter should be looked over. Consign to the wax-pot all irregular and drone combs not wanted for breeding, and with the honey-knife, nicely sharpened, slice off to the level of the frames all parts of other combs which project beyond. Much of this can be done when extracting from those combs to be laid by, and when adding combs of stores, or exchanging those outside the brood-nest to the centre, in spring, not one should escape the process. The bee-keeper cannot do better than carry around with him a small tin cylinder, with perforated bottom, to hold not less than a gallon; this again to hang in another, or a common crock, to catch the drip, leaving the wax dry and the honey or syrup for feeding. Some there may be who will say this is all too much trouble, but the methodical bee-keeper does not find that a trouble which piles up the pounds of wax—the best of wax, too—and at the same time saves the labour of his bees in shortening the cell-walls, and casting such wax out of the hive as so much refuse. Even supposing such wax was not wasted, this process should be regarded by the bee-keeper as a legitimate source of profit—much resembling the practice of plucking the down from living geese—the stock remaining to give further supplies.

There are the scrapings from frames and crates, which, like much of that from separators, edges of sections, &c., is often more wax than propolis, as during spring and summer the former article is so abundant that the bees use it in preference to searching for propolis; but when autumn comes they have little else to do than gather the more resinous substance. It must be admitted, however, that some colonies will at any time stop up every crevice with the most abominable black stuff. This seems to be an hereditary failing, and queens producing bees that behave so badly should be superseded as soon as others can be bred from such as use wax almost exclusively instead of propolis, as we have to look not only to our requirements for the wax-pot, but also to the more cleanly appearance of everything used in the hive. For all such scraps, as well as for every piece of comb found out of place, some convenient receptacle should always be at hand that nothing may be wasted.

It is considered by many that where foundation has not been supplied to swarms, much drone-comb is built, but if the one or two combs of worker-brood are given, as previously mentioned, this trouble will be reduced to a minimum.

Where old stocks are not swarmed and the increase made by nuclei, all worker-combs will be built by the latter, if judiciously fed, and at a much cheaper rate than with foundation. Again, old stocks will build none but worker-cells previous to the first honey glut. In this way, weight for weight, we produce at least two natural combs for one sheet of foundation—six feet to the pound. The statement that twenty pounds of honey are consumed in producing one pound of wax, has of late been reduced to twelve pounds; but experiments have shown that even a less quantity of raw sugar is required to produce that amount of wax. Nevertheless, I will make no reduction in respect of that consideration, neither will I for the keep of the bees during the experiment, for they must live during such period, whether working wax or not. Now twelve pounds of raw sugar fed to obtain brood-combs previous to the honey flow, would cost two shillings, the value of six sheets of foundation; but instead of six combs built from foundation with other wax added by the bees (which is always the case), we have, at the lowest estimate, from eight to ten naturally built combs. Where, then, is the loss in doing without foundation in the brood-nest when moderate (the only profitable) increase is desired?

Under my present management, and with further experiments in comb-building to be carried out next season, I expect to do without foundation for stock purposes entirely. I am convinced that no apiary will in future be properly managed which does not produce more wax than is required for home use; and such surplus will be obtained, not at the expense of the honey crop, but in connexion with a much larger yield than has been obtained with the hitherto indiscriminate use of foundation. —S. Simmins.

FOUNDATION FOR SUPERS.

[80.]—For several years it was my practice when supering to feed each section with comb-foundation, the result of which, so far as rapidly filled sections go, was most satisfactory. But last year I decided to use it more sparingly, and the superiority of sections filled entirely by the bees themselves over those that are worked out from foundation is so great and so easily distinguished by consumers that, although I hope this year to get several hundred sections filled, I am determined to have nothing but the pure product of the bees, and shall therefore discontinue to use foundation—except as starters, say half inch deep.

The bee-keeper who wishes, in these highly competitive times to get a good market for his honey, must produce an article that is free from impurities and other objections. I am aware that we can get comb-foundation which is guaranteed to be made of nothing but pure bees-wax; but I am not quite sure that, if analysis were in all cases applied, the result would be universally satisfactory; but even if it was, there would still remain a very great objection to the use of foundation in supers, viz. the abominable backbone or midrim which it always forms. In fact I have often seen beautiful white sections, which to the eye are everything that could be desired, but when cut up are found to contain a sheet of foundation perfectly intact, the bees having built on to it instead of drawing it out. It may be argued that such cases are very rarely met with; but my experience is, that they are too frequent to be pleasant to either the producer or consumer of comb honey, which is, I think, calculable of doing an immense amount of injury to the honey trade—for who, having once bought such sections, will buy a second time, or recommend the article to their friends? But with sections that are filled by the bees themselves without the aid of foundation the case is altogether different. There we have something which not only looks nice but which is worthy of the name it bears, and instead of customers asking if the comb as well as the honey is good to eat, they will remark that 'there is no comb, for when you cut it, it all goes to honey,' and the purchasers of such a beautiful article do not forget to highly recommend it to their friends and acquaintances so that, although we cannot

get so much section-honey without, as with the use of, foundation, the extra custom we get through selling nothing but the genuine article more than counterbalances the loss in quantity we may sustain through not using foundation. It may be said that I have not used the right sort of foundation, with such I quite concur; nor do I think I shall yet be able to procure a foundation which when built out into comb will for eating purpose be equal to that made by the bees themselves. I have tried a great many different kinds, and my experience is, that if you have it strong enough to bear the weight of a section full of bees on a hot summer's day it is capable of, and most assuredly will, form the objectionable midrim here complained of.—A. SHARP, *The Apiary, Huntingdon.*

THE BEST HIVE. (47.)

[81.]—In the *British Bee Journal* for February 15th, 1885, a paper was published which I had previously read at a meeting of the Hunts Bee-Keepers' Association, in which I advocated a long hive to take not less than twenty frames; and I still maintain that such a hive is of all hives the most preferable. In the first place, if the bee-keeper makes his own hives, as he really ought to if he thinks of making bee-keeping pay, a hive to take twenty frames will cost only a few pence more than one to hold half that number. Thus, in using a long hive a very great saving is effected. 2. With a hive of the above description we can gradually build up our stock by adding *one* frame at a time until the whole number are added; but if we work on the doubling system, with hives that will take only ten frames each, this gradual building up cannot be so readily performed, only with the first ten frames. 3. With a long hive we can at any moment examine any particular frame without disturbing the remainder, but with the doubling system we are obliged to take off the top hive before the combs in the bottom one can be manipulated. 4. In doubling, a sheet of queen excluder, or a crown-board with holes in, must be placed between the two hives, either of which will incur extra expense, or the bees will join the combs in the top hive to those in the bottom one, and, when manipulating, the whole concern will be upset; and I don't know which will be the most irritated—the bees or the bee-keeper; but all this trouble and unnecessary expense is dispensed with where the long hive is used. 5. Hives for doubling are generally made with the sides level with the top of the frames, in which case there is a great difficulty in keeping on the quilt when feeding, &c., in windy weather; and, when manipulating, the bees will boil over the sides of the hive, and the chances are that the queen will be amongst them and get injured, if not entirely lost; and, when preparing such hives for winter, the extra quilts that are put on will prevent the top of the hive going in its proper place, leaving an open space for moisture to draw in, which ought always to be avoided. But with a long double-wall hive, with outer walls two inches higher than the inner ones, we are free from all the above troubles. It is true that hives for doubling can be made with outer walls the highest, but in that case the top hives have to be of such a description as to render them perfectly useless for any other purpose, and one may have fifty of these top hives on hand, not one of which can at a few minutes' notice be turned into a bottom hive. But the long twenty-frame hive can be readily converted into a twin-hive to accommodate driven bees, or to suit other emergencies. Of course the doubling system has its advantages, and, amongst other things, it is undoubtedly true that, as the heat ascends to the top hive, the honey in that chamber ripens quicker than in hives of only one storey; but I never extract until combs are sealed, consequently I never get any unripe honey.

There is also an objection raised against the long hive on account of the frames running parallel to the entrance; but when I find the yield of such hives less than that of hives that have the frames at right angles to entrance, I will conclude that there is something in the system adverse to the instinct of the bee; until then I shall continue to maintain that there is no hive to equal the long one.

As regards reversing, that is a system I have never tried, because I fancy I see in it the very essence of folly. If we had an unlimited market for sectional honey, and no market at all for extracted honey, reversible hives would, no doubt, be just the thing. But it is a well-known fact that the demand for run honey is several times larger than that for sections; and to go to the expense and trouble of reversing combs, involving upon the bees a lot of extra labour in transferring the honey from the bottom to top of hive, and then have to sell sectional or comb-honey for the same price, and in many cases for less than run honey, is a system which I think will never commend itself to bee-keepers generally.—A. SHARP, *The Apiary, Huntingdon.*

[82.] DRYNESS OF HIVES.—1. Mr. S. Giblett (Morecombelake) writes:—'I have twenty hives—my own make—and have never had any trouble from leakage; true, the roofs are not of wood, but if the subjoined description will be of any use to the gentlemen who complain, they are welcome to it. My hives are in four parts, viz., the floor-board, brood-chamber, section space, and roof. First, the floor-board fits into a rebate, on the back and sides of the brood-chamber, while the front is one inch narrower; thus the floor-board fits evenly, and all wet runs off. The floor-board projects four inches in front, and a porch the whole width of the box, with a grooved edge, carries off all wet. The section-chamber and roof are rebated ⅝ in. deep, and the outer edges chamfered to make them look neat. The roof I have gable shape, covered with zinc, nailed with copper nails, and their heads all soldered over, so that they are perfectly water-tight. I provide ventilation by apertures in the gable ends, covered with wire net on the inside, ⅛ in. guage, and have seldom known the bees suffer from excessive heat in the summer. The best hive-makers cannot always ensure dryness. Wood is naturally porous, and in long spells of wet weather there is a tendency to saturate the wood, and produce dampness.'

2. Mr. Walter Willcock (Doncaster) writes:—'There are three kinds of wood generally used for making hives—pine, red, and white deal; pine or red wood are the best for the purpose; white wood is of little use, as it is a well-known fact that it will not stand, however well painted, compared with the two other kinds; it is useful for indoor work, but will not stand the weather. The most important part of a hive is the roof, which should never be made of wood broader than five inches wide; if nine or eleven inches are used without being thoroughly tested, when 'Old Sol has blazed down upon it,' as 'Amateur Expert' says, it will find out the tacks; in fact, if not shaken it will very often split them. My plan of roof-making is to use timber five inches wide, which is put into a testing-room, over 100 degrees of heat, for at least six months previous to being made up, which of course if not sound when it comes out I condemn as being unfit; I then convert it into narrow strips useful in other parts of the hive. The next part is the dryness of the hive, which is a very important part; to this I shall particularly call the attention of all who wish for a dry hive. But it must be thoroughly understood that a hive must be made in a workmanlike style to gain this point. First of all, when I am ready for painting I prepare the hive, I buy the best linseed oil raw, then give the hive a thorough soaking with it, we will say at night, in the morning it will be found to be all soaked in, then I give it another coat in twenty-four hours; after the second dose I mix 1-lb. red and ¼-lb. white lead together with linseed oil raw until about the thickness of paint; then I give it two coats, all the better if you can afford to give the roof an extra coat, then let it stand to get thoroughly hard, then it can be painted to what colour is desirable. By preparing the hive with oil it stops the suction and feeds the grain, whereas if painted without being

prepared it draws all the oil out of the first coat and leaves nothing but the lead to remain; it will be found in time that it can be shelled, or rubbed off with the fingers even to the bare wood. But if done according to my plan it will be found impossible for any rain or moisture to penetrate through the lead. Before giving this information, when I saw the *Journal*, I made it my business to go and examine my own hives, which have never been lifted since November, and to my delight every one was as dry and comfortable as could be, so it is from my own experience that I write.'

3. Mr. Kinnaird Jenkins (Leatherhead) writes:—'The top of my hive is covered with calico and then painted with raw linseed oil, and when dry painted with two coats of good white paint. The dressing of oil prevents the enormous absorption of paint, which is, of course, very much more expensive than linseed oil. If you are in a hurry to complete the painting, boiled oil may be used in lieu of the raw, as it dries quicker.'

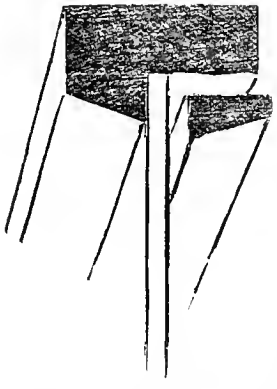
4. 'Mid Cornwall' writes:—'I am no carpenter, but have learned to make my own hives, as an amateur. I make them 3 feet long and 20 inches wide, of the best yellow pine, without any shakes or knots. The wood must be thoroughly dry; when worked it is $\frac{7}{8}$ of an inch, the body of hive is 11 inches deep, and the top $5\frac{1}{2}$ inches, or a plank cut in half. The joint is grooved so as to make the top and bottom fit quite tightly and fairly. The bottom is made of grooved and tongued $\frac{3}{4}$ worked plank, is halved up in the bottom of hive, and fixed quite tight, so that it cannot buckle in any way. I fix the bottoms of all my hives thoroughly tight and firm. The sides are made double-walled; the roof is made of three of my best plank of 11 inches, one on each side, and one put flat on the top, which forms a nice working table for smoker, knife, &c., when manipulating. I use no pieces on side of hive to throw in the water; my hive has a plain side. I have used such hives for three years now and have found them them to keep quite dry. Of course they are kept well painted.'

RIPENING HONEY.

[83.] In the *B. B. Journal* of the 7th instant I notice the opinions of gentlemen respecting the best plan for ripening honey. Allow me to say that my views are with the Rev. George Raynor, as given in his simple eleven words. What sense can there be in taking unripe honey to give onrselves the trouble of trying to do what after all we cannot do, viz., ripen honey as ripened in the natural way by the bees; especially if the price of honey is to be knocked down to 6*d.* per lb., the trouble would not be worth the candle.—John Bolton, *Grantham.*

FIXING FOUNDATION.

[84.]—As it has been requested that I should furnish a description of the contrivance, I do so now with pleasure. I think the following woodcut will clearly show the simplicity of the contrivance. First of all, we will take top bar, say $1 \times \frac{3}{8}$ inches, then get two strips of wood $\frac{3}{8} \times \frac{1}{16}$ inch wide by $\frac{1}{4}$ in. thick; chamfer down to $\frac{1}{8}$ inch. Make fast one side with fine wire-pins or brads; place the foundation against the fast side, then push the loose slip tight to the foundation, then with about three tacks tack it down; it will be found quite secure. Then in the event of having to cut out an old comb, the side tacked down can be raised with a table-knife blade. It is then ready for a fresh insertion of foundation.—W. Willcock.



BEE-KEEPING IN IRELAND.

[85.] I have much to thank you for your article on the reversed skep, and the very clear and practical instructions for working it simply and cheaply. I shall get a few made, and give them to those cottagers who seem most intelligent and successful with their bees. I am leaving home for a fortnight, but on my return hope to try my hand at an improved skep for supering purposes, or the cheap production of honey for extracting. A skep-maker lives in a cottage close by, and I will get him to work from my pattern, and let you know in due time if the method is at all successful. I do not know what skeps cost in England; here a good-sized one is 1*s.* I hope my improved one will not be more than 1*s.* 9*d.*, or 2*s.* at the very outside.

The only thing that discourages one is the miserable state of the country. There is little *law* or *order*. Under the circumstances, I fear it is useless to hope for very prolonged chances of usefulness to one's poorer neighbours, either in matters apiarian or relating to domestic improvement. You will pardon my mentioning such a subject, but it may explain, possibly, small results, as far as this country is concerned, of the kind thought and instruction for which we are indebted to you. In our distressing uncertainty we have little heart to engage in philanthropic schemes for the benefit of our persecutors.—Irish Novice.

BEE-HOUSES.

[86.] Will you allow me to make a suggestion or two on this subject, the result of my own experience?

When I began bee-keeping, I constructed a bee-house, copied from one belonging to a neighbour, greatly resembling the one depicted on the 26th page of your issue of January 21st. But in manipulation I found much inconvenience in having one row of hives above the other. To work at those on the lower shelf was a back-aching business, while those above required a pair of steps to get at them. I therefore cut the house in two laterally, and used one shelf only, placing it two feet from the ground, which I find a convenient height for all purposes. The roof is hinged on the front, and is simply a lean-to made of light wood, covered and with Croggon's felt. The back is *all doors*, opening the full length. I have, therefore, the fullest access to the hives, and at the same time perfect protection from weather. I enclose a sketch of my house, both opened and closed.

A good strong house of this kind, six feet long and 2 feet wide, and capable of holding four hives, with comfortable room for manipulation, can be made for 40*s.* or 50*s.* If the legs are set upon bricks, raised one inch from the ground, they will be kept dry, and may be made of deal two and a half inches square. My houses are seven years old, and are none the worse for wear.—Subscriber.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[47.]—*Best Hive.*—The hive in use by me is a longitudinal one, three feet without, takes twenty frames, and is worked with excluder behind nine or ten of them. These are allowed to remain as brood-nest, and the back part is filled up with frames for honey storage and ripening. Last season several hives worked in this way gave an average of 107 lbs.; some gave much more.—Mid Cornwall.

[50.]—With your permission I should like to correct a mistake in the last *British Bee Journal* of the 21st, on page 31, No. 50, with regard to the best hive for wintering and summer use. If you will refer to *B. B.*

Journal of October 1st, 1885, on page 315, in Class 12, of the Report of the Derbyshire Bee-keepers' Association annual show in September, 1885, you will find that for the best frame-hive, price not to exceed 10*s.* 6*d.*, first certificate was awarded to W. Handby, Hasland, Chesterfield: the second to D. Cooper, Sunny Hill, Derby, and not the best hive as he states.—W. Handby, *Hasland, Chesterfield.*

[50.] *Dryness of Hives and Hive Roofs.*—D. Cooper's plan for hive roofs is one I adopted in 1881 in a hive for which I was awarded a B. B. K. A. certificate at South Kensington; but instead of inside fillets to support roof I use four screw-eyes in hive sides, which, when no papers or bottles are in use, are taken out and the cover drops down and cannot be blown off, besides making hive warmer. For three years I have covered all my roofs with ⅜ rough deal board, covered with Willesden's 2-ply card—cheaper, lighter, and neater than zinc or any other material, and far less trouble. After a year's use I paint, and those made three years ago are as good as new now, and have never let in a drop of wet. The card must be put on wet and turned over the edges and nailed with ⅜ tacks from below, any nailing on the top causes leakage. Most of Baldwin's Hives are fitted with the hinges described in No. 64, and a very good dodge it is.—W. E. Burkitt.

[59.] *Fixing Comb Foundation.*—Mr. Shrimpton's plan of fixing foundation is no new invention, but one brought out by E. M. Hart & Co., for which they gained a prize in the class for new inventions at Wilts County Show in 1883, only Messrs. Hart's frames required no nailing, the two sections of the top-bar morticing into the ends, which were 1½ in. wide at top and ¾ in. at bottom: they answered very well.—W. E. Burkitt.

[67.] *Bees coming out.* (John Robb.)—Keep the front of the hive shaded by a board placed in close proximity to the front, so that the sun does not shine in the entrance, and sufficiently large to prevent the entrance of the refracted light from the snow.—W. B. Webster.

[68.] *Moving Honey and Syrup.*—(O. P.) Yes, if O. P. reverses his frames, but not if frames are allowed to remain in their normal position; and No, to last part of his query. The stimulating food given in spring will be used by bees as fast as taken down if instructions in 'Useful Hints' are followed.—Woodleigh.

[69.] *Removing Syrup.*—(O. P.) Bees do not remove stored syrup or honey into supers unless it is uncapped for them, or the frames reversed; so if O. P. gently stimulates his bees five or six weeks before his honey harvest begins, he will be doing his bees a service and increasing his own chances of a larger harvest. But to begin stimulating breeding at the end of this month or early in March, and your honey flow not commencing till the third week in May, I consider a waste of energy.—Woodleigh.

[70.] *Storing Syrup.*—(O. P.) If the bees are fed gently, and the bottle removed before your sections are put on, how can any syrup be mixed with your honey? Of course if you put sections on and give your bees access to syrup they will store it, not otherwise.—Woodleigh.

[70.] *Storing Syrup.* (O. P.)—In stimulative feeding only a small quantity is allowed at one time, just sufficient to deceive the mother bee into the idea that stores are coming in; this small allowance is stopped when the supers are put on, so that there is little chance of any being stored in the supers.—W. B. Webster.

[71.] *Shading Bees.*—I think your hives are not sufficiently shaded, the light is reflected into the hive from the snow. You must not shut your bees in or you will probably lose them all.—Chemicus.

[71.] *Shading Bees.* (R. Carter.)—It is inadvisable to shut the bees in at any time, unless in a perfectly dark place, such as the wintering cellars and pits which our American cousins use. You should so shade the hives that not only the rays of the sun are prevented from entering, but also the refracted light from the snow. This last precaution is very frequently neglected, perhaps it is so in your case. I have not lost a dozen bees on the snow this season by attending to both.—W. B. W.

[72.]—*Excluder Zinc under Sections.* (T. Jenkinson.)—It is not at all necessary to use excluder zinc under the sections. Your experience of such being a nuisance is quite correct. A spoilt section or two now and then being more than fully compensated for by the greater freedom with which the bees work up into the sections. Eleven or twelve frames below will give ample room for breeding, and keep the mother bee employed in her proper quarters; but the absence of drone comb below will sometimes tempt her to mount into the supers for the purpose of laying drone eggs. Allow not less than a quarter of an inch and not more than three eighths between rack and frames.—W. B. Webster.

[72.] *Excluder Zinc.*—This should never be used under sections, with any other form of super it is almost a necessity. All bees hate it. I don't even use it with large supers (14 × 14 × 4), but cover the frames so as only to leave the two outside ones open to the bees. It is necessary in using sections in body of hive if placed parallel with frame, but turn them on their sides and place at right angles—in two tiers of seven each—as made for the last two years by E. M. Hart & Co., and no excluder zinc is wanted. Several of my best sections were worked in this way last year.—W. E. Burkitt.

[72.] *Excluder Zinc under Sections.*—In my opinion is a hindrance to bees working in sections, as the sections themselves form a queen-excluder, if the section crate is made to fit the sections. I have never had but one section with brood in this last three years out of eight stocks with crates on top of frames. Distance between top of frames and crate ¼ inch.—Thomas Rose.

[73.] *How to prevent stocks swarming more than once.*—You may do as you propose, namely, cut out all queen-cells but one: you must be careful you leave only one, it is not at all difficult. If you have not had much experience I should work them to get the largest quantity of honey on the non-swarming principle. You will get more honey by preventing swarming altogether.—Chemicus.

* * *Some replies forwarded have been omitted, being similar in substance to those inserted.*

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[87.] *Dry Sugar Feeder.*—Would the cause of the bees not taking any sugar from dry sugar feeder last September be because they were not very strong or the weather cold?—Heather.

[88.] *Heather.*—Is there any heather in the midland counties, and whereabouts in or near Leicestershire?—Heather.

[89.] *Italians or Crosses.*—Is there any objection to Italians or crosses in a principally white clover district?—H.

[90.] *Carniolans or Italians.*—Which would be the more profitable of the above two races of bees, and which are the better-tempered of the two?—J. B.

[91.] *Price of Honey.*—What difference in price has there been the last season between 1-lb. and 2-lb. sections of honey?—R. T.

[92.]—Will the bees store an extra quantity of honey in the 2-lb. sections to repay the lesser price which they sell at?—R. T.

[93.]—What is the best to do with granulated sections?—R. T.

[94.] *Warmth of Manipulating Room.*—I have an extracting and manipulating house 12 × 8 by 7 feet high, gable roof. I require to warm it sufficiently to rear queens on Alley's plan; would an oil-stove be suitable?—J. E. L. G.

[95.] *Purifying Wax.*—Would any of your readers explain the process of purifying wax, and preparing it for sale or show? I have followed instructions already given in the *Journal*, but fail to produce a bright-coloured clear wax.—T. W. Jones, *Etwall, Derby, Jan.* 21.

[96.] *Material for Smokers.*—What is the best, most convenient, and quickest to light material for patent smokers?—A. P. Howes.

[97.] *Trapping Birds.*—Can any of your readers give me information as to the best way of trapping or otherwise destroying smallbirds that are destroying my bees?—Beeb.

Echoes from the Hives.

Dorking, January 19th, 1886.—*Upward Ventilation in Winter. A Word of Encouragement.*—Let not Mr. Lyon (p. 19, 1886) be discouraged because no discussion was raised in August, 1883, on the above topic. No doubt it was read and acted upon, as a great many hints are when subscribed to by such names as S. Simmins and F. Lyon. Be not weary in writing to the *Journal*, for we shall all reap if you faint not.—W. Hollier.

Ongar, Essex, January 19th, 1886.—Having purchased a hive from a friend about the 15th of October, 1885, and on the 4th of January, 1886, I found to my great surprise that they were being cleared out by a stock of its own weight and strength when set up, but without the slightest disturbance or fighting going on. Weight about twenty to twenty-five pounds, which, I think, is enough to carry them through the winter.—A Subscriber.

Alfriston, Sussex, Jan. 20.—The weather here has been rather cold lately; bees flying very little. I have eight stocks—two bar-frame and six straw skeps. This is my first year to take in your *Journal;* I like it very much. Most of the bees kept about here are in straw skeps. My bees are all wintering well.—Young Beekeeper.

Honey Cott, Weston, Leamington, 26th January.—It is now nearly a month since bees in this locality have had a chance to fly, having had several days of dark, cold, frosty, snowy and stormy weather. However, some are taking advantage of a nice change in the air to have a fly to-day. The snow is not all gone, and it looks as though we shall have some more frost and snow.—John Walton.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Inquirer, *Surrey.*—We regret that we cannot afford the space for the list of all the bee-keepers in your county. But the Annual Report of your Association would give you considerable assistance.

Ringstead.—Your suggestion has been complied with in the present number.

R. L. Richardson.—*Flowers in Bloom.*—Amongst the flowers that may be expected in bloom during swarming in the north may be mentioned sycamore, horse-chestnut, apple, hawthorn, black currant, limnanthes, broom, birdcherry, plum, raspberry, strawberry, &c.

Westbury.—*Artificial Swarming.*—By the plan you propose, unless you have a ripe queen-cell to give them, the swarm, consisting of old bees with only one frame of brood, would raise the queen. This is wrong, she should be raised in the stock. If your sight prevents your finding the queen, your better plan would be to divide the brood-combs equally, and place the two hives equidistant from the old stand, so as to divide the flying bees also. You will soon see which has the queen by the excitement of the other. You may either leave them in their then positions, or place the one containing the queen on the original stand and move the queenless to a fresh place. As this will be greatly weakened by the loss of so much brood it would be as well to place it on the stand of another stock, and move that one to a fresh stand.

M.—*Moveable Floor Boards.*—In the long hives now generally used, moveable floor-boards are not necessary, as the floor can be cleansed by pushing all the frames to the front, scraping the back part, then pushing them to the back and cleaning the front part. If you like to have it moveable you can either fit strips of wood into the space between the walls, or you may arrange to remove the packing if you please, without removing the bees, by lifting the whole hive with floor-board on to a large board or sheet, and then raising the hive body leaving the floor and the packing on the sheet.

Correction.—In our list of candidates who gained second-class certificates the name of S. Pridmore is given instead of W. S. Pridmore, Hinckley.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

PRESENT AND FUTURE PROSPECTS OF APICULTURE.

It is well in these days of apparent depression in apiculture and diminution in the value of honey to pause and consider the reason of this revolution: and, having discovered the cause, endeavour, with renewed vigour and determination, to eradicate the evil. We are told on all sides that, with agriculture at such a low ebb, and all other branches of industry suffering around us, we cannot expect that bee-culture should be in the ascendant. Foreign competition and free trade have had somewhat to do with the present condition of bee-keeping, but, as will be pointed out, the obstacle is apparent, and can be grappled with. Taking a retrospect of bee-keeping for the past two hundred years, we find that bees, with but few exceptions, have been kept in one way, now styled the 'old-fashioned system.' When the ordinary domicile was a straw skep, and suffocation at the end of the season was in vogue, thousands of stocks were then annually destroyed, and the quantity of honey was never very great. With the nineteenth century opened the dawn of advanced apiculture, followed by better-constructed hives, improvement of supers, extractors, feeders, foundation, and numerous other appliances. A new era arose when the *British Bee Journal* was established, and since then there has been a constant onflow of leaflets and cheap publications inculcating the facilities and proving the advantages of bee-keeping. Immediately following the publication of the *Journal* was instituted the British Bee-keepers' Association, supported by numerous clergymen and other earnest men who had the real welfare of their fellow-creatures at heart. Then followed the establishment of the Lincolnshire, the Devon and Exeter, and a host of county Associations. Bee exhibitions were inaugurated, bee-tents visited each town, and even every village in the kingdom. Every English county has been canvassed, Scotland and Ireland have been visited. Experts have shown a laudable ambition to possess certificates in accordance with their respective abilities. And thus a new industry has been proclaimed—an industry which could be conducted by either sex—an industry which would add to the working-man's income, and bring hope and joy to many a poor man's hearth. What wonder, then, that many have embarked in this industry with the hope that good results would follow and fair returns be produced? Naturally, with these benefits brought home to the very doors of the community, bee-keeping revived and spread with wonderful rapidity. It has extended not only through the whole of the United Kingdom, but to the most remote corners of the globe, and we can see monthly, through the kindness of Mr. Bellairs, the large importations of honey into this country.

What is doing the British bee-keepers for a time so great an injury is without doubt the adulteration of honey and the manufacture of a spurious article, large quantities of which, imported from Switzerland and America, have been palmed off to the public under the guise of honey: and people, because they can get it at a low price, are content to purchase it, innocent of the various concoctions of which it is composed. A quotation from an article that has been already alluded to in our columns, from the *Medical Press*, will illustrate what is going on in our midst:—

'The [manufactured] comb is filled with a better kind of treacle sold as "golden syrup," the sides of the skeleton frame enclosing the comb are covered in the usual way with glass, and to the eye of the purchaser cannot be distinguished from the genuine article. Of course it is offered to the unwary customer at a reduced price; but for all that the sophistication, or falsification, is, to say the least of it, a very improper one, although it may not in this instance be injurious to health.

'The falsification and adulteration of honey is carried on in an unusually barefaced manner. Large quantities of what is sold as honey is nothing more or less than clarified treacle and simple syrup, worth about 2*d.* per lb. Glass jars are exposed for sale labelled "New Honey," the only portion of which taken from the bee-hive is the piece of honeycomb occupying the centre, and from which the honey has been previously extracted by the process referred to above.'

The blame, however, does not rest so much with those that sell the articles thus described, as with the public. Do away with the demand, and the supply of such compounds must, as a natural consequence, cease. After such a bountiful harvest as the last, with so much pure honey, and a still greater quantity of adulterated compound bearing the name of honey in the market, can it be wondered at that the lawful industry has received somewhat of a check, that many apiarians are disheartened, and that we hear whispers in some quarters that the work of the various Associations is drawing to a close? This is certainly looking at it from a very gloomy point of view. We cannot but admit that apiculture does not appear so remunerative just at present, but the remedy seems within our reach, and there is hope for a much brighter future for our treasured industry. If there is such a demand for so-called honey, it is evident that there is a large scope for the production and sale of good British honey. The public have to be educated as to what pure honey is, it therefore devolves on us all to let them know what they are eating under the guise of honey. Let the desponding take heart and hope for an increasing and steady sale, and a growing demand, for all the honey

that can be produced in the British Isles; prices will go up, and there will still be left ample work for all.

If our voice could reach the ears of foreign importers we would counsel them to 'pause' before they venture to send to us further consignments of their superabundant honey. There are evidences abroad, clear and distinct, which show that the importation of foreign honey has been overdone. The importers have not been so successful this year in finding a market for their honey as in previous years; quantities still lying, unsold and unmarketed, in the docks. A few months ago there was a letter in the *American Gleanings* to the same effect from a gentleman in Cambridgeshire, who, in assuring Mr. Root of the safe arrival of some honey he had instructed him to send to him, informed him that in consequence of the cheap rate at which good British honey might be purchased in this country, there would in future be little necessity for procuring it from abroad. It would thus appear that, provided we are favoured with a good harvest during the present year, and bee-keepers proceed in their work with earnestness, importers may find it to their interest not to flood the country with foreign honey.

It would be very desirable for the encouragement of those farmers who are establishing bee-farms to see some comparative statement of the profits arising from bee-keeping and those of other minor industries. In our own mind, we feel assured that bee-keeping would be proved to be one of the most profitable of rural pursuits. In the annual report of the Devon and Exeter British Bee-keepers' Association, we note a report from one of the district secretaries, Rev. B. Powell, of Buckland Filleigh, who states: 'My bees have paid me more than five Alderney cows' butter and milk have done this year. I have planted eight acres of Alsike clover for my bees, from which I hope to get at least 1*l.* an acre in honey, while the clover will be used for my stock.'

There is then, we consider, much to cheer the British bee-keeper in the steady and earnest pursuit of his calling.

JOTTINGS BY THE WAY.

During the month of January the Bucks Association collected nearly three hundred subscriptions for the year 1886. Agricultural depression prevails in Bucks as in other counties, and by its side exists one of the most perfect district organizations possessed by any County Bee-keepers' Association in the United Kingdom.

The Royal Agricultural Show of 1887 will be held at Newcastle-on-Tyne. Bee-keepers in the North will please note this.

A Reading Book on the subject of Bees and Bee-keeping, by the Rev. F. G. Jenyns, for use in schools, is now in the printer's hands, and will shortly be issued. The work has been revised by the Educational Committee of the B. B. K. A. The introduction has been written by the Baroness Burdett-Coutts.

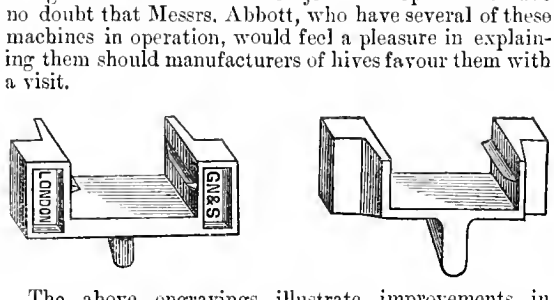
It has been resolved that the certificates granted to experts by the B. B. K. A. shall contain an explanation of the requirements for each class. Holders of third-class certificates will gain considerably by this arrangement, being described as skilful in the management of bees. We are informed that the skill displayed by a lady in a recent examination led to this step being taken.

We have received from Messrs. Green, Rainham, two samples of reversible frames, which are simple and effective, and not liable to get out of order. One can easily be applied to Standard frames already in use by cutting off the projecting end of the top bar, and putting a small screw in the centre of the frame end or side. It is quickly taken off for extracting, &c. if required; but when manipulating it is kept firm by a wire nail pushed in the upper angle. The other has some advantages over the first, and may be preferred by those starting with new frames, but the bottom bar must be of the same thickness ($\frac{3}{5}$) as the top bar.

We have also received from the same firm a moveable metal-end or distance block, which dispenses with any cutting of the top bar, and is at the same time interchangeable with Standard frames.

Mr. J. Perry, of Banbury, forwards a sample of his reversible frame, which is similar in idea to the frame figured in page 382, second column, in last volume, the end revolving from a screw in the middle of side-bar—an idea which commends itself by its great simplicity. Being broad-shouldered it can be worked with any other frame or hive. The top and bottom bar are $\frac{3}{5}$ thick; there is little room lost by this divergence from the size of the Standard frame. Mr. Perry guarantees that the ends will bear the weight of eighteen pounds.

We have frequently been urged to devote a portion of our columns to amateur hive-making. With this request we have now much pleasure in complying. In the present number (p. 59) will be found the commencement of some instructions in that direction, by a gentleman of great experience, and who, in February, 1881, read a paper before the British Bee-Keepers' Association on 'Cheap Bar-frame Hives for Cottagers' use,' which we trust will be acceptable to our readers, and will assist them in their labours. Conjointly with this, as an aid to those who are about to manufacture a number of hives, we might direct the attention of such to the excellent properties of Markall's saw-bench, a representation of which is to be seen in the advertisement of the Messrs. Abbott. By the aid of these benches these manufacturers turn out every year hundreds of hives; and through their excellence they have attained a high character for their workmanship. The machine, we believe, was the outcome of many years' experience of a practical joiner, who so succeeded in perfecting it that its work, usually done by hand, can be effected at one-fifth of the ordinary cost. Six first-class medals were secured by the patentee, and the verdict of the *Builders' Circular*, in 1871, was, 'that in manual-power machines there is nothing to compare with Markall's, and that it is a great favourite in London joiners' shops.' We have no doubt that Messrs. Abbott, who have several of these machines in operation, would feel a pleasure in explaining them should manufacturers of hives favour them with a visit.



The above engravings illustrate improvements in moveable metal-ends brought under our notice by Mr. Alfred Neighbour. One block shows the front view and the other the back. The improvements claimed are that no cutting of the wood is required to adapt them to the frame, and the ends are held firm by knife-cutting projections on either side, and at the same time they can be easily separated from the frame when desired.

Although in America no contrivance is used to adjust the frames of comb and keep them the correct distances apart, it is common in this country to have either metal-ends or broad-shouldered frames, which answer the same purpose. Not unfrequently in the course of handling much convenience is found in being able to gently push several frames of combs bodily from one side of the hive to the other without danger of injury.

It is thought by some bee-keepers that bees are less likely to propolise metal than wood, and, if they should

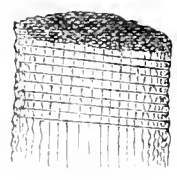
attempt so to fix them, the dislodgment is more easily effected by using the former.

Mr. Neighbour informs us that his firm first introduced their improved metal-ends in December, 1884, and adapted them to their hives during last year when they were exhibited at the Inventions Exhibition. Further improvements have, however, been made this year by having the ends more solidly cast, so that the complaint of the metal sometimes yielding to pressure, and bending when pushed on to the bars, is entirely obviated.

INTRODUCING QUEENS.—MR. BENTON'S METHOD.

It is advisable to select always, when about to introduce a valuable queen, a stock of bees which is in a perfectly normal condition, and in prime order, that is, has a good laying queen, brood in all stages, honey, pollen, and plenty of young bees. I remove the reigning queen, and at once cage the imported queen in a pipe-cover cage such as is here illustrated, being careful to put

DIRECTIONS FOR MAKING.—Use wire-cloth having ten to twelve meshes to the inch. Cut a piece 2 in. wide by 4½ in. long, roll it around a stick to give it a cylindrical form, lap the edges, and sew with a piece of wire. Then in one end of this cylinder make slits ⅞ in. apart and ⅞ in. deep, and bend over the wire-cloth so as to close this end of the cage. With the flat end of a pencil press warm wax or comb into the bottom inside to give it firmness, then unravel five or six strains of the wire-cloth at the other end.



Queen-Introducing Cage.

the latter over cells of honey, near the centre of the cluster of bees, so the queen will surely be kept warm and get food during her imprisonment. I usually put into the cage as companion-bees five or six just-hatched workers, taken from the hive to which the queen is to be introduced. The cage is pressed into the comb until the points reach the bases of the cells; and it is essential to place this comb in the hive in such a manner that the end of the cage will press against the adjoining comb, lest the bees by clustering on it pull it out by their own weight. On the following day, just about sundown, the queen is to be released, provided upon opening the hive the workers are not packed densely about the cage, trying to sting her through it. In the latter case, she may be left caged twenty-four, or even forty-eight hours longer. But, if left this length of time, it is necessary to look for newly-formed queen-cells, and destroy them before releasing the queen. It is best in all these manipulations to use a little smoke. Upon freeing the queen, drizzle diluted honey or sweetened water over the combs and bees. The queen may also be daubed with honey at the moment she leaves the cage. The combs are then to be replaced, and the entrance of the hive contracted so but one or two bees can pass in or out at the same time. It will be well not to touch the hive for two or three days thereafter, as the bees may attack the queen if the hive is opened before they are thoroughly accustomed to her.

The conditions necessary to success in introducing queens are complied with by the above plan, namely: The bees are queenless long enough to have become fully aware of the fact, yet not long enough to have started queen-cells; the strange queen is caged long enough to acquire the peculiar odour of the hive to which she is to be given; the bees are all at home when the queen is released, and thus all get thoroughly gorged with food and are well disposed towards the new queen. No robbers come about, and by morning all is in order. —FRANK BENTON, *Bees.*

ASSOCIATIONS.

THE BRITISH BEE-KEEPERS' ASSOCIATION.

The annual general meeting of the members will be held at 105 Jermyn Street, on Wednesday next, 17th inst., commencing at 3 o'clock. The chair will be taken by the President of the Association, the Baroness Burdett-Coutts.

The agenda contain some important motions for discussion.

Mr. Jesse Garratt will move a resolution in favour of an extension of the prize list in the bee department of the Royal Agricultural Show.

The Rev. E. Clay will call attention to the desirability of the Association holding a thoroughly representative exhibition of English bee-keeping during the present year.

Two resolutions will be submitted in reference to the election of the Committee and the filling up of any vacancies that may occur during the year.

It is hoped that every member of the Association who can attend the meeting will do so, and thus evince their interest in the Association's work.

NORTHAMPTONSHIRE BEE-KEEPERS' ASSOCIATION.

The Annual Meeting of the Northamptonshire Bee-keepers' Association was held in the Infants' Schoolroom at All Saints' Schools on Saturday, the 30th ult., when Mr. A. T. Adams (Crick) presided. The minutes of the last meeting having been read and signed, the balance-sheet for the past year was read by the Treasurer. Before doing so, he said it would be found that they were in a better position than they were a year or so ago. Although the Association was not in so satisfactory a state as he would have liked, still they were able to reduce some of the old liabilities. They had worked the expenses as low as possible. The receipts had amounted to 31*l.* 15*s.* 5*d.*, and the expenditure to 32*l.* 7*s.* 9½*d.*, leaving a balance due to the Treasurer of 12*s.* 4½*d.* The officers for the ensuing year were then elected as follows:—President, His Grace the Duke of Grafton, K.G., Secretary, Mr. J. E. L. Gilbert, Treasurer, Mr. J. Francis, Committee: Rev. A. W. W. Durham, Messrs. Adams, Hefford, Lines, Perry, Rooke, Cherry, T. Adams, Wood, Longland, Stimpson, and Manger. A vote of thanks having been passed for the use of the room the meeting terminated.

HEREFORDSHIRE BEE-KEEPERS' ASSOCIATION.

The annual general meeting of the Association was held on Monday, February 1, at Howlett's Hotel, Hereford, under the presidency of Dr. Chapman. There was a fair attendance of members. The hon. secretary, Mr. Alfred Watkins, read the annual report, and the reports of the experts, Messrs. Hole and Meadham. From the annual report we learn that the season has been a favourable one for the bee-keeping industry; and it is satisfactory to have to record a most plentiful harvest, many members having reported average yields of 50 lbs. to 60 lbs. of honey per hive, in one case from as many as thirty-one hives. Lectures on bee-keeping were given in the spring at Almeley, Marden, and Much Dewchurch, by the hon. secretary, with satisfactory attendances and results. A most successful exhibition of hives and honey was organized by the bee-keepers of Ross in connexion with the Horticultural Show. The Hereford Honey Fair and Hive Show was held at the Corn Ex-

change on Saturday, August 29th. About 6000 lbs. of honey were staged; 1624 lbs. of honey were sold at about 2*d.* per lb. lower price than in previous years. The quality was not quite as good as usual, being in many cases contaminated with honey dew. Thirty-two new members have joined during the year, and the members now stand at about 200. The experts' reports of their tours were very satisfactory. The report and the balance-sheet were adopted. From the balance-sheet it appears that the Association has in hand 25*l.* An interesting discussion took place as to the comparative value of the flat-topped hive and the bar-frame hive to cottagers. The meeting then proceeded to the election of officers. Mr. J. Rankin, of Bryngwyn, was re-elected president, and Mr. E. Hammond, Leominster, and Mr. W. T. Lawrence, Hereford, were substituted for Mr. J. H. Harper and Mr. L. Tilley on the committee. The officers were re-elected *en bloc*. A discussion arose as to the best market for the honey that was produced in the county in such large quantities, the hon. secretary advocated the display of advertisement posters, announcing that English honey was produced largely in the neighbourhood, and could be obtained from the owners or from any grocers. The proceedings terminated with the drawing for a prize bar-frame hive, which fell to Mr. W. Tomkins, Burghill.

GLAMORGANSHIRE BEE-KEEPERS' ASSOCIATION.

The above has at last been established. At a meeting held at the Town Hall, Neath, on Thursday, the 28th ultimo, under the presidency of the Rev. H. P. Williamson, Vicar of Margom, it was unanimously resolved, 'That an Association be formed for the county.' The meeting, convened by Mr. E. Thornton of Bridgend, was not numerically a success, but in every other sense it was. Mr. Thornton reported that he had received replies from a great many of the bee-keepers promising to join; and there is no doubt, judging from the enthusiasm displayed by those present, representing nearly every district in the county, that, although slow on being formed, the Glamorganshire Bee-keepers' Association will flourish, and do a vast amount of good among those it is intended to benefit. The Lord-Lieutenant is to be asked to become its first President, and a number of the county gentlemen Vice-Presidents. Mr. Thornton was appointed Secretary, and the following gentlemen acting Committee:—Revs. H. P. Williamson, Margom; Jones, Llandough Rectory; S. Nichol, Cowbridge; Thomas, Dyffryn; Messrs. Lanford, Neath; W. Gay, Cardiff; J. Muir, Margom; Jones, Neath; G. E. Pyle, Aberdare; D. P. Davies, Aberdare; Gibbin, Neath; Hawkins, Ewenny; W. Mitchell, Swansea; H. Meagher, Mumbles; and Singer, Bridgend. The subscription was fixed at 5*s.*, 2*s.* 6*d.*, and 1*s.*, according to class.—D. P. D.

DERBYSHIRE BEE-KEEPERS' ASSOCIATION.

Might I suggest through the *B. B. J.* to the Secretary of the Derbyshire B. K. A. that an account of the General Meeting of our Association, which took place about three weeks since, if published in the *B. B. J.*, would be very interesting to us outside members who could not attend.—High Peak.

SWANMORE BEE-KEEPERS' SOCIETY.

At a special meeting of the members of the above Society held at Swanmore Vicarage on Friday evening, January the 29th, present: the Rev. W. E. Medlicott, in the chair; E. H. Bellairs, Esq., Hon. Sec. H. & I. W., B. K. A; the Rev. R. Parker, Miss F. Cockburn, Miss Medlicott, Miss Martin, Mr. E. Molyneux, Mr. C. Martin, Mr. E. Ainsley, Mr. G. Horner, Mr. T. Sharpe, Mr. C. Selfe, and Mr. H. W. West, Hon. Sec. It was resolved unanimously that to prevent an impression growing that this Society is working in antagonism to the Hants and I. W. B. K. A., the Swanmore Bee-keepers' Society should be properly affiliated to the Hants and Isle of Wight Bee-keepers' Association, and that its title should be altered to the Hants and I. W. B. K. A. 'Swanmore Branch.' It was proposed by E. H. Bellairs, Esq., that the funds of the Swanmore Branch should pass into the hands of the county treasurer, with power to the committee of the Swanmore Branch to demand grants (all but a fixed per-centage) to the same amount for local purposes. This was seconded by Mr. C. Martin, and carried unanimously. The Branch now numbers nearly seventy members, and is in a flourishing condition.—H. W. West, *Swanmore House, Bishops Waltham, Hants.*

Selected Query.

[98.]—*Which in your opinion are the best bees for producing honey?*

I am strongly in favour of the first cross between a Ligurian queen and a black drone. I find this strain better than pure Ligurians. As to Ligurians I find a very great difference exists, which I can only suppose, as I do not import them myself, arises from the district in which they are produced. I have generally found small queens produce better workers than those very fine and handsome ones. For spiteful bees I can recommend the progeny of black queens crossed with Ligurian drones. The other cross are in my experience nearly as gentle as the pure race.—F. Lyon.

The first cross between Ligurians and blacks.—J. L. Seager.

Cyprians.—Samuel Simmins.

The best bees for producing honey and every other purpose are the pure Ligurians or Italian Alp bees (*Apis ligustica*). As they are, if pure, so enormously prolific, and it was their hardiness and great industry that made me go in for them in 1862. I happened to go to the Great Exhibition held in London in 1862 on a cold wet day, and my hobby being bees I went at once to the Agricultural department, where Messrs. Neighbour exhibited a stock of Ligurian bees, and close to him Mr. Marriott exhibited a very strong stock of black bees. The Ligurians were quite busy at work, coming in loaded, when there was not a black bee going out. I went to the Exhibition on several other wet cold days to see this sight. I said to myself, the Ligurians are good workers, whatever they are besides, so I at once went in for them.—William Carr.

Our native bees I believe to be fully equal, if not superior, to any distinct race of foreign bees as honey-gatherers. As a cross breed I prefer the Ligurian with our native bees; they are excellent breeders and very even, pleasant to manipulate, and capital workers. I have generally had good results from such cross. The Ligurian and the Carniolan, as a distinct race of foreign bees, are, I consider, those best worth cultivating as honey-gatherers.—R. R. Godfrey.

Cross-bred bees are best honey-gatherers. A cross between English, Italian, and Carniolan, would produce the best progeny. You then have hardiness, prolificness, and docility combined.—A. Neighbour.

Some bees are best for producing honey in frames for extraction, whilst others are best for comb honey. Carniolans are the most *gentle* bees of all to handle. They work very hard, are good comb-builders, and very prolific, but they are inclined to swarm very freely indeed. The *pure* Italians are very handsome and *gentle*, and if *quietly* handled, stick to the combs, and take little notice of what is being done. They are good

workers, early and late, and for producing *extracted* honey where a large number of frames are used in storyfying, are the best. They are very delicate, more subject to '*spring dwindling*' and loss of queens than black bees. The dark, leather-coloured Italian queens I obtained from 'Paglia' at the Kilburn Show, were the hardiest and best bees of this kind I ever had. Black bees are the best for storing comb honey in supers or sections; they are hardy, the best comb-builders, take to the supers more readily than most kinds, and are less liable to swarm if they have sufficient section room given them. They fill the sections with beautifully-sealed straight combs, of uniform and delicate colour, better than any other kind of bees, so far as my experience goes. Hybrids, between Italians and blacks, are very much hardier than pure Italians. They are very prolific, good workers, are, as a rule, very bad-tempered, but for those who are not timid whilst handling them, they are, perhaps, the best for both comb and extracted honey.—JOHN M. HOOKER.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

AMATEUR HIVE-MAKING.

[99.]—In the following remarks I purpose giving such instructions as may enable an amateur to make a good serviceable hive. I purposely abstain from any details which will need tools not always in the possession of amateurs, such as are required for tonguing, grooving, rebating, &c. All the dimensions given are those when finished, and if strictly adhered to, the hive will be easy of manipulation, the necessary clearances to allow easy play being allowed. Before commencing work let all your tools be sharp and in good order. As you proceed, let every piece be accurately squared at the ends, and the edges shot true and square, otherwise you may find when nailed that the whole affair 'winds' and no part will fit another properly.

The hive I recommend for general utility is that known as a Combination hive having a long body, provided with an entrance and porch at each end, and an entrance (E, Figs. 1 and 2) at one side which may be

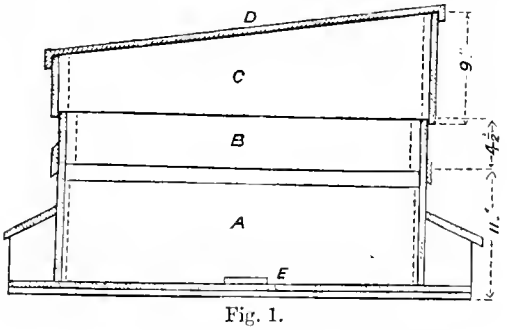


Fig. 1.

opened when required, and a temporary porch and alighting-board attached. The frames run across, *i.e.*, parallel with the front. It has a 2-inch space between the double walls filled with cork-dust. It may be worked as a single, twin, or triple hive; sections may be worked at the back or on the top of the frames. Frames for extracting may be worked at the back, feeding may be performed either at back or on top. The roof case C is deep enough to contain a rack of sections or a feeder; and if tiering up is desired, it may be raised by the addition of the lift B, which will also give height enough for a box of frames for doubling. The walls are outside the floor-board, and the roof-case, when the lift is away, comes outside the walls. The roof-cover, which is made separate for ease in lifting off when it is not required to remove the whole roof, has a deep flange all round, and is made perfectly waterproof, as will be described, so that no wet can possibly enter. The only plinths used are on the lift, which is of course only required in summer time. The dimensions inside are $14\frac{1}{2}'' \times 8\frac{1}{2}'' \times 30''$. The two former are, of course, fixed, but the length may be increased or decreased as desired. It is a simple matter of addition or subtraction of the necessary inches. Thirty inches, however, will be found a useful size, as it gives space at the back for spare tackle, such as feeders, dividers, frames, &c., which will be found a convenience.

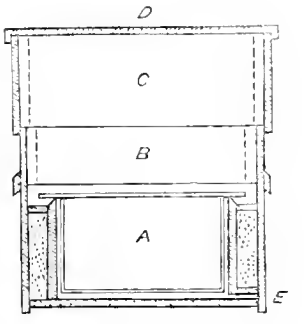


Fig. 2.

The wood used may be either pine, yellow deal, or white deal, which are to be recommended in the order named. Whatever wood is used let it be well seasoned. The thickness for the sides is '4-cut,' *i.e.*, four cuts out of a 3-inch deal, which will therefore yield five boards about half an inch thick when planed. For the ends, into which the sides are nailed, use '3-cut,' which will give four boards, about $\frac{5}{8}$ thick when planed, to the 3-inch deal. If not fond of hard work with little to show for it, get the wood planed for you, but run your smooth plane over it yourself. Although planing on both sides when one side is hidden is not necessary for appearance, yet it is better, as if planed one side only and not nailed together at once, the wood curls, the planed side becoming concave, giving some trouble in nailing. For the inner walls 9-inch stuff is wide enough, for the outer walls the boards must be cut out of 11-inch plank.

Each hive will require as follows:—

Inside Walls.—F 1 and 2, two pieces, each $30'' \times 8\frac{1}{2}'' \times \frac{1}{2}''$, one edge chamfered off to $\frac{1}{8}''$. F 1 to have a piece $4'' \times \frac{3}{8}''$ cut out of the lower edge to form E, Fig. 1 and 2.

Ends.—G 1 and 2, two pieces, $19\frac{1}{2}'' \times 10'' \times \frac{5}{8}''$. From one edge of each cut an entrance $8'' \times \frac{3}{8}''$.

Outside Walls.—H 1 and 2, two pieces, $39\frac{1}{4}'' \times 11'' \times \frac{1}{2}''$, shaped as Fig. 3. H 1 to have a hole $4'' \times \frac{3}{8}''$, cut one inch from lower edge.

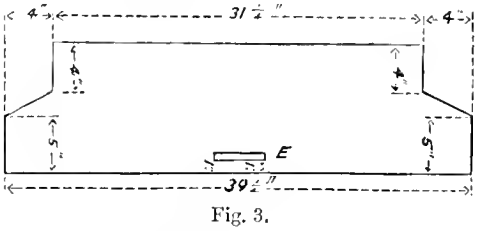


Fig. 3.

Corners.—J 1, 2, 3, 4, four pieces, $7\frac{1}{2}'' \times 2'' \times \frac{5}{8}''$.

Floor.—$39'' \times 19\frac{1}{2}'' \times \frac{1}{2}''$, made of two pieces 9", and two pieces 11", jointed, glued, and battened with two

battens, 2″ × $\frac{5}{8}$″. After glueing, allow the floor to rest in a warm place for a few days to shrink, if it will, before battening; this will prevent any future opening.

Two strips, K, 30″ × 2″ × $\frac{1}{2}$″ will be required to lay over the cork-dust between the inner walls, and two pieces, L 1 and 2, 20$\frac{1}{2}$″ × 6″ × $\frac{1}{2}$″, chamfered, as shown in section Fig. 1, to nail on to the projecting ends of H 1 and 2, to form the porches.

Dividers.—Two pieces, 13″ × 8$\frac{1}{2}$″ × $\frac{5}{8}$″, each having nailed to each end a strip 8$\frac{1}{2}$″ × $\frac{7}{8}$″ × $\frac{5}{8}$″. Punch down the nails and plane down to *exactly* 14$\frac{1}{2}$″. Along one edge nail a piece 17″ × $\frac{5}{8}$″ × $\frac{1}{2}$″, and out of the other edge cut a piece 4″ × $\frac{3}{8}$″, and replace it with a French nail or screw, on which it can turn. See Fig. 4.

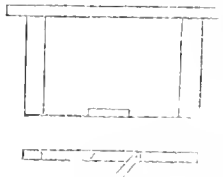


Fig. 4.

To build the hive.—Lay G 1 on the bench, nail J 1 along one end. See Fig. 5. Place F 1 on end on G 1, with chamfered side towards J 1 and nail to J 1. Lay a divider, made exact as above, against F 1. Lay F 2 against it, chamfered side out. Lay J 2 against F 2, and nail to G 1. Now take away the divider and nail F 2 to J 2, by this means you ensure the important dimension of 14$\frac{1}{2}$″ between F 1 and F 2 being correct. Proceed in the same manner with the other ends of F 1 and 2, using J 3 and 4 and G 2. It is as well to just temporarily nail J 1, 2, 3, 4, to G 1 and 2 with a couple of nails, and nail from outside of G through J and clench the nails inside. Nail H 1 and 2 to the ends of G 1 and 2; but note that, as shown in Fig. 5, while the bottom edges of F, J, and G, are flush, the top edges of H and G are flush, and as H are 11″ and G only 10″ a 1″ overlap is formed to come outside the floor-board. Do not forget to bring the entrances E on same side in nailing. They form the entrance for use as a triple hive, as shown in Fig. 2. A little bridge must be made over it to keep the cork-dust in, and a piece of wood planed up to fit it as a plug when not required for use.

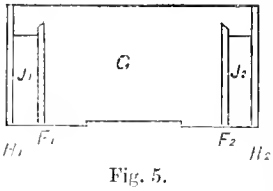


Fig. 5.

Now fit the floor-board, which may be either fixed or not as preferred. Nail L 1 and 2 on to the projecting ends of H, and the body of the hive is complete.—F. L.

(To be continued.)

DRONES AND THEIR USES.

A Protest against the Prince Consort Theory.

[100.] According to the prince-consort theory, the drones or male bees are produced on the approach of the swarming season with the object of providing consorts amongst them for the young queens then hatching, and after the accomplishment of this are killed or expelled as useless encumbrances from all hives possessing a laying queen.

Certainly this provision of consorts is *one* and an *important* service performed by the drones, but I cannot agree with the supporters of this theory in regarding it as the *only*, or (with a few exceptions) as more than an *incidental* service. Nobody will deny that in discouraging drone-breeding we are completely at variance with the wishes of the bees themselves. In fact, one of the objects of giving comb-foundation is to limit or prevent the production of drone-comb and brood, as every colony of bees will rear some drones each summer when they have the opportunity afforded them.

Some of the older authorities give the proportion of drones as about ten per cent. I cannot vouch for the correctness of this statement myself, but should expect to find the proportion varying from week to week. I should expect it to be greatest during the earlier portion of the honey harvest, and decreasing with the contraction of the brood-nest towards its close. I should also expect to find fewer drones in a hive containing a large proportion of newly-hatched or nurse bees than in one in which the proportion of foragers was greater.

From my colonies all being in bar-frame hives, the bees are under somewhat unnatural conditions. I should therefore esteem it a great favour and assistance if some of my readers would kindly favour me with the following particulars:—1. The usual position of drone-comb in skeps. 2. The relative proportions of (*a*) drones, (*b*) brood, and (*c*) comb in skeps as compared with worker ditto. 3. A comparison between the work done by hives containing (*a*) many, and those with (*b*) few, or (*c*) no drones.

As there is a general consensus of opinion among bee-keepers that a queen only mates once in her life, and that the result is death of the bridegroom, I propose to assume the correctness of this view in my inquiry. There are three classes in the hive, and I venture to submit that these do not all three look at the question in the same light.

On this theory, then, from the drone's point of view, the result of his honeymoon is eminently unsatisfactory, inasmuch as it means suicide. I think, therefore, that it would have been more to his own interest had he remained a bachelor. As the male, however, has the credit of being the wooer amongst the generality of animals, I do not deny that their mutual jealousy and competition for the royal favour might be sufficient to cause some drones to rush upon their fate even did they foresee the result. Still, this does not alter the fact that the successful suitor has only secured his own destruction, which seems to me to condemn this theory, as seen from the drone's standpoint. From the queen's point of view the theory (as might be expected) has more to recommend it at first sight. The greater the number of suitors, the greater is her range of choice, and the more precious does the royal favour become.

But when we come to assess the results by this theory, whether we adopt the views of the drone, queen, worker, or of the whole family generally, we find ourselves upon the horns of a dilemma, and a most serious one, too. Suppose the queen has mated with a drone from her own hive—that is, with her own brother—we have in-breeding in one of its most aggravated forms; and we have yet to find the animal or plant in which this does not mean degeneration of the progeny. So far as I can learn, this rule holds good throughout the whole world of life, from man downwards. The only exception I know is when it is a case of Hobson's choice, 'that or none.'

Supposing we take the other horn of our dilemma, we shall find it even more awkward, for if the queen mate with a strange drone, then, according to the prince-consort theory, her brothers are absolutely useless to the hive that reared them. Their mating with strange queens *may* be even prejudicial to their own hive, as merely increasing the competition, or, in other words, intensifying the struggle for existence. That in the great majority of instances the queen, as might be expected, mates with strange drones, I have ample evidence to produce if required. I can not only quote a case from my own apiary, in which the evidence is nearly, if not quite, sufficient to convict the culprits, if tried in a court of justice; but I can also quote Cheshire, Cowan, Woodbury, and others, as taking precautions against it, besides referring to Darwin and the evidence he has collected.—A Student.

(To be continued.)

HOW BEES FIND THEIR WAY.

[101.]—Sir John Lubbock, in the *Contemporary Review* of November last, gives some 'recent observations on the habits of ants, bees, and wasps,' and, dealing in the first place with the instincts and powers of bees to find their way back after having been carried to a distance from home, observes that 'that this has by some been attributed to the possession of a special "sense of direction."' And, after alluding to Mr. Darwin's suggestion, that if animals were put into a box, and this box made to revolve, first one way and then another, this 'sense of direction' would be lost, he says, 'In parts of France it is considered that if a cat is carried from one house to another in a bag, and the bag is whirled round and round, the cat loses her direction, and cannot return to her old home.'

Sir J. Lubbock then relates some 'interesting and amusing' experiments made by M. Fabre:—

'He took ten bees, marked them in the usual manner with a spot of white, and put them in a bag. He then carried them half a kilometre in one direction, stopping at a point where a cross stands by the wayside, and whirled the bag rapidly round his head. While he was doing so a good woman came by, who was not a little surprised to find the aged professor standing in front of the cross solemnly whirling a bag round his head, and, M. Fabre fears, strongly suspected him of some satanic practice. However, this may be, having sufficiently whirled his bees, M. Fabre started off back in the opposite direction, and carried his prisoners to a distance from their home of three kilometres. Here he again whirled them round, and then let them go one by one. They made one or two turns round him, and then flew off in the direction of home. In the meanwhile his daughter, Antonia, was on the watch. The first bee did the mile and three-quarters in a quarter of an hour. Some hours after two more returned; the other seven did not reappear. The next day he repeated this experiment—of course with different bees. The first returned in five minutes, and two more in about an hour. In this case again three out of ten found their way home.'

M. Fabre then, from time to time, repeated the experiment under different conditions, with 49 bees, with 20, 40, and 15, making in all 144 bees, of which number 47 were observed to find their way home. Some in a very short time, and some after several hours' absence.'

These experiments were to M. Fabre's mind conclusive that the instinct of the bees rose superior to the whirling process, and the various difficulties which he put in their way.

Sir J. Lubbock, however, combats these conclusions. He says that 47 bees finding their way home out of 144 is 'not a very large proportion,' and then goes on to say,—

'Out of the whole number no less than 97 appear to have lost their way. May not the 47 have found theirs by sight or accident? Instinct, however inferior to reason, has the advantage of being generally unerring. When two out of the three bees went wrong, we may, I think, safely dismiss the idea of instinct. Moreover, the distance from home was only one and a half to two miles. Now, bees certainly know the country for some distance round their home; how far they generally forage, I believe, we have no certain information, but it seems not unreasonable to suppose that if they once came within a mile of their nest they would find themselves within ken of some familiar landmark.'

Now, I do not presume to set up my humble opinion in opposition to such a marvellously close observer as Sir J. Lubbock, but I should like to point out one or two things which strike me in reading this interesting article upon a most interesting subject, and which seem to me to weaken his arguments. I should also like to invite the opinion of others on the subject.

And first, although, as Sir J. Lubbock says, 47 out of 144 bees finding their way back after the whirling process is 'not a very large proportion,' no account seems to have been taken of the fact that this whirling process—the bees in a bag whirled again and again round the observer's head—very probably (I should say most probably) injured a considerable number of the bees, and really incapacitated them for the homeward flight. It was, at all events, a most unnatural process, and seems to have been done with some considerable violence.

Then, again, in the middle of the day, when the experiments took place, there were doubtless so many bees rushing in and out of the hives that some of the marked bees very probably entered the hives without being observed.

And so, although Sir J. Lubbock says that when two out of three went wrong, we may 'safely dismiss the idea of instinct,' I would say that we have no proof that two out of three did go wrong. Certainly one out of three were observed to go right; but this is a very different thing, under the conditions of the experiment, from saying that two out of three went wrong.

Then, as to their finding their way by 'sight or accident'—by coming 'within ken of some familiar landmark,' have we any proof that bees have 'familiar landmarks?' Does the bee, indeed, make its flight by sight? Certainly not, altogether, I think. Move a hive on a summer's day a yard or less from its stand. If the bees took notice of 'familiar landmarks' they would surely see their own hive as they returned home; but we all know that they fly at first straight to the old place, although no hive is there.

Again, I remember that, in the course of one of Sir J. Lubbock's own experiments, he induced bees, or wasps (I forget which) to come through an open window and to feed in his room, and that he found that, when they returned home, their first impulse was to fly, not to the window by which they had entered, but towards another which happened to be in the direct line towards their nest. This surely was not 'sight or accident,' but rather 'a sense of direction,' or instinct 'unerring.'

Again, in the case of dogs, taken even 100 miles away from home by railroad, and then finding their way back, and there have been, as we know, many such cases, we cannot for a moment suppose that they wander about aimlessly until 'by accident' they come within 'ken of some familiar landmark.' There is surely in their case some power of instinct far more mysterious. And, if so, why may there not be the same power in some degree in our bees?

At all events, I hope that neither M. Fabre's experiments on the one hand, nor Sir J. Lubbock on the other, will be taken as conclusive, but that further experiments will be made in the same direction. Without further proof I do not think we ought to accept the theory of 'sight or accident,' or that of the 'familiar landmark.'—F. G. Jenyns, *Knebworth Rectory, Feb.* 1886.

'USEFUL HINTS' AND REVERSIBLE FRAMES.

[102.] Whatever may be the general opinion with regard to the reception of reversibles by the Editor, no one will charge the writer of 'Useful Hints' with a disposition to say anything in their favour. He shows his prejudice at the commencement by saying that Mr. Heddon has so much honey on his hands. 'Tis true he says, 'This is no argument' against their use, but in the tone of the remarks he reveals his bias. He, like many others, objects to reversing because it is so contrary to the instincts of the bee. I think that if we use the word habit instead of that controversial word instinct we shall be less likely to have verbal quibbles, as I prefer to substitute that word, and I ask, 'Is it in accordance with the natural habits of the bee to have a large number of honey cells uncapped with a knife, as he suggests, and the honey carried into a separate receptacle above, in order that the bee-keeper may conveniently purloin it? to take their honey and give them sugar in

exchange? to make them swarm before they wish, or stop them when they want to? to make them build rectangular combs and fill the spaces top and bottom? and to build this comb, moreover, to a moveable bar when the bee appears decidedly to work for fixture of tenure? to make their combs by machinery with cells according to our desire? to interchange the combs with each other, and to make away their queen before they wish to give them another of a different breed? to partition their hive with loopholed zinc through which their queen cannot pass, and a hundred other things? Are all these in accordance with natural habit or instinct? Yet we have reason to believe 'Useful Hints' adopts them. Naturally man is made to walk or ride an animal, but since the days of Stephenson there is nothing equal to the iron-horse. He who waits for the habits or instinct of the bee to make improvements in his methods will not gather much of the golden harvest. Placing a super above the body of the hive is not a natural process and reversing is only done, as a rule, as an extension of the same plan. We credit the bee with inability to improve its own state, and so we assist it. Perhaps if the bee had human intelligence it would reverse its own comb. We know nothing to the contrary. This we know from observation—they do not kick up so much dust at being reversed as they do at uncapping; so the testimony of the bees, as far as it can be gathered, is in favour of the former. If reversing were more unnatural than other processes the bees would refuse to work after it, and there is not a single instance of a 'strike' on record. Nothing that I have seen written against reversing has been of any value, save that methods were complicated and expensive, and these objections are removed since the introduction of the 'Acme' frame.

'Useful Hints' further shows his bias by stating as an argument against reversibles that which, to my mind, is decidedly in their favour. He says, 'The prolonged cells above the brood-nest form a heat-retaining canopy above the nest.' One is almost inclined to ask if his frames have any covering? A reversiblist, writing on the prolonged cells, would say, 'When the frames are reversed the brood gets placed in the upper part of the hive where there is most heat, while the prolonged cells nearly touching each other at the bottom act like hills, keeping off the cold wind coming in beneath the dummy while the brood lie ensconced safely in the hollows behind them.'

I have read 'Useful Hints' with pleasure and profit, and think him very safe under that heading; but as he is taking to writing upon 'Things-in-General,' some of them, in his opinion, not useful and likely to lead to useful controversy, may I suggest that it would be well if he would give himself some short *nom-de-plume* by which he could conveniently be referred to?—John Rudge, *Dursley, Gloucestershire.*

[We are sorry to have touched the susceptibilities of Mr. Rudge. Perhaps if we had strongly advocated reversible frames, under 'Things-in-General,' instead of maintaining a waiting attitude, he might not have objected to our taking action in that direction. We have always been taught, 'from our youth up,' to *guide* instinct for our own advantage, but never to *oppose* it. If Mr. Rudge thinks that *his* knowledge is superior to the '*God-given* instinct' of the bee,—which teaches it to bestow its pollen and honey in certain positions with regard to its brood-nest—and wishes entirely to oppose that instinct by turning its domicile topsy-turvy, by all means let him do so.

At the same time we beg to observe that since instinct guides the bee to store its honey *above* its nest, we by no means oppose that instinct by inducing it to increase that store in the same direction, by placing it in our supers and enlarging its nest up to the very base of those supers, while enabling it to store its pollen-mixture in the position dictated by nature, as most convenient for her purpose. In this age of scientific progress we may one day find the inversion of human abodes advocated by some learned enthusiast, but until such topsy-turvy process has been proved advantageous to the human race, we shall prefer to live in our house as it stands at present—right side uppermost. Why does our friend object to both sides being heard? We are highly flattered by his estimate of our labours under 'Useful Hints' *proper*, and regret that he does not approve the enlargement of our department under the more discursive title of 'Things-in-General,' but we beg to assure him that whenever the latter 'heading' shall be generally disapproved by our readers we shall only be too happy to discontinue it. For a short *nom-de-plume* let him designate us by our initials U. H.—Useful Hints.]

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[50.]—W. Handby accuses me of misstatement. The paragraph to which he refers is as follows:—'In reply to "Amateur Expert" (25), I think the hive I have been making for some time (for which I was awarded a certificate at the Derbyshire Bee-keepers' Association's Annual Show for the best hive for winter and summer use) will meet the requirements mentioned.' At that show I exhibited a hive in Class XII., 'For the best frame-hive with arrangements for summer and winter use.' For my exhibit I obtained a certificate as I state. But I do not state that my hive was the best hive. W. Handby's so-called correction is therefore incorrect. —Douglas Cooper, *Sunny Hill House, Normanton, near Derby.*

[54.] *Moving Hives.*—You may move your hives without much loss. Prepare your stands, and on some cold evening remove your hives to their new situation as careful as possible. Wrap some light-coloured paper round them, and place a board slanting to the entrance. Remove all the stands from the old place and change the appearance of everything as much as possible.—Fred. Wilshaw, *Cheddleton.*

[72.] *Excluder Zinc.*—My experience is that excluder zinc under sections is quite useless. Four or five years ago I purchased some sheets and used one of them. It came off warped, having been propolised to the utmost powers of the bees, and these are never small. There was no sign of the queen having passed through, but neither has there been in any other case. I have never used another sheet, and in all the hundreds of sections which I have taken off during several years, I believe that not one egg has ever been laid. I place my crates immediately on the top-bars, and find my home-made flat knife—a piece of broad hoop-iron with a chisel edge—very useful for loosening them. — C. R. S., *South Cornwall.*

[87.] *Dry Sugar Feeder.* (Heather.)—The weather, as you state, being, at the time alluded to, cold, and there being only a small quantity of bees, would be sufficient cause for their not taking the food from your dry-sugar feeder. You should crowd the bees by removing all unoccupied combs until they cover each comb left, and place the feeder close to ontside of cluster; they would then feed. Remember the grand axiom of successful bee-culture, Keep your stocks strong.—W. B. Webster.

[87.] *Dry Sugar Feeder.* (Heather.)—Most probably from the two causes you name combined.—Amateur Expert.

[89.] *Italians or Crosses.* (H.)—No. I do not quite see the force of your query, can you repeat it in another form? There is no objection to any kind of bees to work white clover.—Amateur Expert.

[89.] *Ligurians or Crosses in a white-clover district.* (H.)—None whatever as far as honey-gathering is con-

cerned; but crosses, Italian ones, are exceptionally clever with their 'business ends.'—W. B. WEBSTER.

[90.] *Carniolans or Italians.* (J. B.)—They are about equal as workers, and Carniolans are the best tempers far and away. (The ladies' bee!) The reason is because the Italians have been improved (?) by crossing with the villainous Cyprians.—AMATEUR EXPERT.

[90.] *Carniolans or Italians?* (J. B.)—Bee-keepers are now giving the preference to Carniolans; they are exceptionally quiet to handle, and so have earned the title of the 'ladies' bees.' A more extended trial of their honey-gathering qualities is required before giving a definite opinion, but they are very good; their fault is having a too frequent desire for swarming. Italians are very gentle, much easier to handle than natives, are grand workers. The manner in which they protect their hives from robber bees is worth keeping a stock if only to watch this.—W. B. WEBSTER.

See also opinion by J. M. Hooker, Query [98] p. 58.

[91.] *Price of Honey.* (R. T.)—When selling sections of 1-lb. at 1*s.*, 2-lbs. sold for 1*s.* 9*d.*—W. B. WEBSTER.

[92.] *Will the bees store an extra quantity of honey in the 2-lb. sections to repay the lesser price that they sell at?* (R. T.)—The bees will store an extra quantity of honey by using 2-lb. sections, but I have found hardly sufficient to repay the difference in price. 1-lb. sections are much more saleable.—W. B. WEBSTER.

[92 & 91.] *Honey: its price in 1 and 2-lb. Sections.* (R. T.)—We make nearly as good price *pro rata* of 2-lb. sections as 1-lb., but there is a far larger demand for the latter, which we study; under certain conditions, the bees store in the 2-lb. far more profitably than in the 1-lb.—AMATEUR EXPERT.

[93.] *The best to do with Granulated Sections.* (R. T.)—Sell them if possible. Who objects to buying them? Failing that, melt them down, skim off the wax and feed the bees with them. Failing that, eat them yourself. Failing that, send them to the local hospital, and—a few—to the Editor *B. B. J.* (N.B.—The Tower Street office boy has a sweet tooth.)—AMATEUR EXPERT.

[94.] *Warmth of Manipulating Room.* (J. E. L. G.)—A paraffin stove will raise the temperature up to 80° Fahr.; on warm days higher. Such a one I use for that purpose with the same size room. This gives a sufficient warmth to cut out and insert the cells containing eggs into the frames, and makes a capital contrivance for heating the resin and wax on the top of it.—W. B. WEBSTER.

[95.] *Purifying Wax.* (T. W. Jones.)—If you have followed all the directions in *Bee Journal* your wax is irretrievably dark. Why not use a wax extractor? If you make any quantity with this simple machine wax of a good colour is ensured; but in making small quantities the combs should be picked over, the light-coloured ones melted separately from the dark. Straining through flannel improves the colour very materially, but the 'game is not worth the candle.' You can bleach it by sunlight or acids, but this renders it of no use for any purpose connected with bee-keeping.—W. B. WEBSTER.

[96.] *Material for Smokers.* (A. P. Howes.)—Brown paper unglazed, fold round and round, occasionally turning it upon itself to ensure draught through the folds; don't be frightened of putting enough in. Fill the barrel diametrically.—W. B. WEBSTER.

[96.] *Material for Smokers.* (A. P. Howes.)—We have used nothing but dry brown paper for years. The chief fault is in the smokers; cut a piece off the top end with a file so as to ensure the outlet is larger than the hole in the bottom end through which the wind is forced, and keep it clean inside, they often get choked.—AMATEUR EXPERT.

[96.] *Smoking Substance.* (A. P. H.)—If A. P. Howes will get some peat, which is easily obtained from any nurseryman, and thoroughly dry it, he will, I think, find nothing either light quicker or burn better or longer, and it has the great advantage of keeping alight a long time without blowing; and this is of great use when one wants to thoroughly overhaul a few hives. Brown paper (the rougher the better) rolled fairly tight is also a useful thing for the smoker; but nothing to my mind can equal the peat.—H. W. WEST.

[97.] *Trapping Birds.* (Beeb.)—The only bird which I have found eating bees at this time of the year is the great titmouse, sometimes wrongly called the great blackcap. These can be caught in small steel snap-traps, baited with linseed meal; but I always shoot them with fine shot when I find them attacking my bees, as I find that the best and quickest way in the end. —M. C. H.

[97.] *Trapping Birds.* (Beeb.)—Try common bird 'gins' baited with beef suet or linseed set at the entrance of the hives.—AMATEUR EXPERT.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[103.] Is there any substance which will prevent bees from fastening down the section-rack on the tops of the frames? Would vasaline smeared over the bottom of the rack be of any use? When large racks, holding thirty-three one-pound sections, are used, it is most difficult to get them off when removing sections without shaking the whole hive,—at least that is my experience. —M. C. H.

[104.] *Myrobella Plum.*—I shall be obliged if Mr. H. Dobbie, or any one else, will state in your *Journal* whether in their experience the myrobella plum is suitable for a hedge? It is said to be grown for that purpose in France. Is the said plum thorny, and likely to resist the biting of cattle? I should like to grow it for my bees close to the rail fence which separates my garden from a field.—O. B. T.

[105.] Will bees fasten oil-cloth down when used as a quilt in bar-frame hives?—O. B. T.

[106.] *Foul Brood.*—Can it be that this disastrous disease is in any way connected with placing the frames parallel to the entrance of the hives instead of at right angles? It could not, one may suppose, originate the disease, but can it pre-dispose the bees to develope it? For some years I kept the frames in my hives on the latter plan, and knew nothing (by experience) of the disease; but immediately, or almost immediately, I changed the frames to the former position, the disease appeared, and for three or four years it reappeared year after year, in spite of all my efforts to eradicate it. In 1883, however, I changed the frames back again to the latter method, and I am thankful to say that I have not seen any sign of it since. A bee-keeper in this neighbourhood of considerable experience has never had foul brood in his hives, but I find that he has always adopted the latter position for his frames; whereas several others who have adopted the former position have suffered severely from it. — D. A. DOUDNEY, *Ore Rectory, Hastings.*

[107.] I have noticed with long hives and using queen-excluder at the back that dead bees accumulate in this portion of the hive, and if not looked to pretty often they get piled up on the floor-board. Would an entrance at the side in the back part in any way interfere with the working? or would a hole in the floor-board answer the purpose, of course having a shutter to close if

necessary? I have an idea that queen-excluder zinc stimulates swarming, perhaps by giving the bees an idea that they are more confined for space than they really are.—H. JENKINS.

[108.] I have a stock of bees in a wooden bucket. How shall I proceed to drive them?—WELSH NOVICE.

[109.] Will honey drain out of uncapped comb by simply laying it in a flat position?—WELSH NOVICE.

[110.] I see by last week's *Journal* that there is a likelihood of an Association being formed for this county (Glamorgan). What are the advantages of such an Association?—WELSH NOVICE.

[111.] How is the best way to put a swarm of bees in a Unicomb Observatory Hive?—H. BARLOW, Jun.

[112.] *Salicylic Acid Solution.*—I have about a quart of solution prepared last summer, will this do for mixing with syrup this year?—D. P. DAVIES.

[113.] *Extracting.*—My hives are situated in a garden about a quarter of a mile from the house. Which would be the better plan, extracting in the garden or bringing the frames in a box and extracting in the house?—D. P. D.

Echoes from the Hives.

South Cornwall, Feb. 2.—Very little can be heard under this heading now, but it may be stated that our bees soon came out after the post left us on the night of Wednesday, the 27th ult. The next day there was a gleam of sunshine which was taken advantage of, and yesterday again there were flights, though it was overcast. As the lesser celandine is opening, a few fine days will set the bees pollen-gathering.—C. R. S.

Bishops Waltham, Feb. 4.—The weather in this district still keeps very changeable and unreliable, but still during the past fortnight the bees hereabouts have been able to get several good cleansing flights; and as far as I have heard all hives in this district are so far in a prosperous state, and promise well, with the solitary exception of one, and this one died off last summer, and after thoroughly cleaning the hive it was stocked again with a good swarm and a fine healthy queen, but it has again fallen a victim.—H. W. WEST.

NOTICES TO CORRESPONDENTS & INQUIRERS.

COTTAGER.—In the number for December 7, 1885, you will find an editorial article on 'Inverted Skeps.'

E. C. KERR.—The bees forwarded were cross-bred, several degrees, or rather generations, removed from purity. The queen was amongst them. The bees were not in a condition to detect the cause of death.

T. P. C.—*Comb-building from Sugar Syrup.*—Bees will produce wax as readily from sugar as from honey. Therefore you may feed with it when combs are being built.

J. B. S.—1. *Melilot.*—*Melilotus leucantha* is the specific name of the plant you are in quest of. It is frequently advertised in our columns. 2. *Transferring from Skeps.*—No. Place your combs in the frames the right side up.

C. G. MASON.—The specimen of oil-cloth would serve your purpose. It is pliable, and the particular odour would soon pass away. But the American enamel cloth is preferable, and there is little difference in the price.

BEESWING.—*Non-swarming.*—*Keeping Young Queens.*—As you say some of your hives have not swarmed for three years, and that they gave you 100 lbs. each of honey last year. It is evident you do not need advice upon the first point. As to the second, it is very probable that your bees have replaced their queens, although they did not swarm. If you have reason to suppose from any signs noticed that any of the queens are aged, you had better devote one stock to queen-raising in nuclei, and when you have young fertilised queens, requeen your stocks.

G. W.—*Treatment of Stock in Skep.*—If you do not require increase, but simply to retain your one stock, you had better let them swarm; hive the swarm in a bar-frame hive, about twenty-one days after transfer the combs from the skep to bar-frames and unite the whole. Although now a beginner, you will by then be able to find the queen readily. Preserve that which you find in the skeps, which is a young one, and remove the old one, which goes with the swarm. The easiest feeders to use are those formed of a bottle with a cap, inserted in a block with regulator to vary the number of holes. All dealers supply them.

J. W. BATCHELOR.—The 'white material' described is mould or mildew, caused by moisture. It can be dusted off by a soft brush. In conically shaped skeps there is no other way of feeding except from below.

W. J. GREEN.—Your paper on the 'Climax' hive was so clear and ample that there is no necessity for further explanation.

H. W. D.—1. *Dry Sugar Feeding.*—This plan has been found to answer well. Don't forget that moisture, either condensed or carried in, is necessary to enable the bees to take it. 2. *Candy.*—The object of this is to supply the bees with food in the form of minute crystals accompanied by a certain amount of moisture. The food made by kneading powdered loaf-sugar and honey comes practically to much the same thing. Granulated honey is not absolutely injurious to bees, but the crystals are not fit for food except when moistened. 3. *Non-swarming.*—Read our article on the subject in issue of January 21st. 4. *Working for extracted honey.*—The largest harvest is obtained by doubling. If you do not wish to adopt that system you can extract from frames placed either over or at the back of the brood-nest; and if the season is such as to give you a good surplus there is little doubt of sufficient food remaining in the main hive to last the winter.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
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HONEY MERCHANTS.

BEE & FRUIT FARMING Co., Limited, St. Mary Cray, Kent.
BRITISH HONEY Co., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

BENTON, F., Munich, Germany.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

LYON, F., 94 Harleyford Road, London, S.E.

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Editorial, Notices, &c.

EXAMINING EXAMINERS.

There is an art of examining as well as that of being examined. Some candidates, with a very superficial knowledge of their subject, nevertheless manage to display their (mental) wares to such advantage as to delude an unwary examiner into a belief that their knowledge is profound; others, on the contrary, fail to get credit for the knowledge they possess. Their minds are like a pawnbroker's shop, full of valuable goods of every description, without any order or method, so that the owners cannot as a rule produce any article when it is wanted. An experienced examiner will soon recognise this class of mind, and by careful questions discover the virgin gold. But as it is not given to every one to go to Cambridge and be a Wrangler, so not every one is fitted to be an examiner.

If we wish to teach others, we ourselves must be thoroughly conversant with the subject, and not less so if we aspire to examine. Again, some examiners seem to take a melancholy pleasure in puzzling candidates, either by asking out-of-the-way questions, or by attaching too much importance to the knowledge of trivial and unnecessary details; while others with far more reason try to find out what a candidate does know, rather than what he does not.

Some years ago a candidate was being examined by two professors, one asking questions, and the other marking, so as to give the candidate every chance of passing. Some ridiculously minute question was asked by the examiner, to which the candidate replied that he did not know, and that, moreover, he did not much care, And the marking examiner, in narrating the story, said, 'I immediately gave him full marks. I thought it a most sensible answer.'

In looking over examination papers, we are often reminded of this story, and though the reply was no doubt wanting in respect, still we cannot help thinking that the examiner was wrong in asking the question, as it was really no test of the candidate's knowledge or ignorance.

The examination for the third-class expert's certificate, which is essentially a practical examination in the rudiments of bee-keeping, can be passed by any one who knows the life-history of the bee, and who is able to manipulate. We are frequently told that our bees now are over-manipulated, and that this is no real test of a bee-keeper's knowledge, and that the object and aim of bee-keeping being the production of honey, the man who gets the largest harvest is the best fitted to be an expert. In some minds there seems to be a lurking belief that theory is opposed to practice, and we constantly hear the saying, 'That may be all very well in theory, but it is wrong in practice,' as if practice was deduced from theory, and not theory from practice. We can teach a parrot to speak, or a boy to learn by heart a proposition of Euclid, but neither one nor the other, in the full sense of the word, knows what he is talking about. Just in the same way a candidate may accurately describe the differences between a queen-bee and a drone, but fail to find the queen in a hive which he is manipulating. This failure would not prejudice the candidate's chance of passing, if we thought it was due to accident, nervousness, &c.; but we should be very careful to guage his practical knowledge still further before allowing him to pass.

That some bee-keepers are too fond of meddlesome manipulation we are quite willing to admit, but the abuse must not blind our eyes to the use of manipulation; and before stamping a man with the impress of an expert, it is the duty of every competent examiner to find out whether he has the true ring, and will pass as current among bee-keepers.

USEFUL HINTS.

Severe frost still continues, and in many parts of the country the white mantle still covers the ground. For years we have not experienced a winter's cold of so long duration, and consequently so unfavourable for the safe wintering of bees. Long confinement invariably tells upon the health of colonies, and in a far greater degree upon small than large ones.

Wherever the accepted rules for safe wintering have been carefully observed the loss will probably not be great, but where carelessness and procrastination in making the necessary preparations prevailed, we anticipate extensive mortality and heavy loss. The last two or three winters were so exceptionally mild that bees wintered well in almost any condition: and the danger is that the large numbers of bee-keepers who have lately joined our ranks may have been inclined to consider the wintering of bees an easy matter, requiring no extra precautions, whereas the very contrary is nearer the truth, since safe wintering is the basis upon which—more than upon any other point—success in apiculture depends.

LET THEM ALONE.—So long as the present cold weather continues—the thermometer stands at 20° Fahr.

as we write—it is the height of foolishness to attempt to manipulate, or to disturb the bees in any way whatever. Of course if colonies are perishing for want of food they must be fed, but in the way which entails the least disturbance; and this, perhaps, is by placing a frame of honey beside the cluster in frame-hives, and by giving a pint of warm syrup about once a-week, over the feed-hole in skeps. The entrances must also be kept clear of dead bees and refuse.

Examination.—It has always been a rule with us towards the end of the present month, in bright and mild weather, quickly to look over any doubtful colonies to see that the queens are right and the food sufficient, and to confine them closely to the frames which they are able to cover, wrapping up and covering warmly as a finale to the operation. But these examinations must only be made on really *warm days*. We remember the month of February to have been so warm and bright that almost on every day the bees were flying, as in May or June. Such seasons have, nevertheless, usually proved disastrous from the bees being induced to very early breeding, and the following month turning out cold and sunless, with easterly winds prevailing; the brood has been chilled, breeding suddenly checked, and the latter state of the poor bees has been worse than the former.

In any case where doubt exists as regards sufficiency of food, let the quilt be gently turned aside and the fact be ascertained at once. This will in no way disturb or excite the bees if the act be neatly and quietly performed. A feather moistened with carbolic-acid solution passed over the frames as the quilt is being raised, will effectually keep the bees in check, and prevent crushing when replaced.

Unions.—Any colonies so much depopulated as to cover one or two frames only will be best united to other stocks. If the queen be alive, and worth preserving, she may be kept on hand, in case of emergency, such as loss of queen in populous colonies, &c.

With from fifty to one hundred of her subjects let her be placed on a piece of clean, dry, sealed honey-comb, in one of the small boxes in which Italian queens are sent to this country, and kept in a warm room. With care, we have kept queens in this way for more than three months in perfect health; by giving an occasional flight, replacing dead bees with live ones, and covering the box with perforated zinc, with felt over it, for ventilation.

The bees which are to be united should simply be removed, on their own frames, and placed outside the cluster to which they are to be added—without any jarring or disturbance—and as quickly as possible, using no smoke. Evening is the best time to perform the operation, and, the hive being carefully covered with its quilts, by the following morning the union will have been peacefully accomplished.

Spring Flowers.—Those most frequented by the bees during the early spring are the crocus, snowdrop, sallow, wallflower, gorse, &c. The blooms of these may be seen covered by the bees on bright sunny days. By these they are stimulated to breeding, the signs of which may be noticed by the dried pollen, wax refuse, granulated honey, and other refuse on the alighting-boards, carried out by the bees when polishing the breeding-cells for the queen's use. There are no better marks of a healthy, flourishing colony than these.

Feeders, although not in full requisition at present, should be provided, or kept in readiness for the spring campaign. When breeding is in full force a constant income of food is desirable, to a smaller or larger extent, as the case may require, care being taken that the queen is not shut out from the brood-nest by the cells being filled with syrup.

Things-in-General.—*Foul Brood.*—Respecting the disinfection of hives from foul-brood germs, Dr. Tinker writes: 'In my practice I have found one part each of carbolic acid, alcohol, and water, used with the atomiser, to be highly effectual in the sick-room in destroying the contagion of typhoid fever, scarlet fever, and diphtheria. Probably the same strength of mixture would be strong enough to cleanse hives of the germs of foul brood.' This seems to be worth a trial in preference to destroying the hives. In our last issue Mr. Doudney raises a question which may have an important bearing on this subject, viz., whether the 'parallel' or 'hot' system of arranging frames in a hive may not tend to the retention, or fostering, of the disease when once introduced, and the instances he quotes are certainly striking. In our own apiary all our hives are on the 'right-angled,' or 'cold' system, and during more than forty years' experience we have had no case of this terrible disease. Of course, when the germs are present the disease must follow, despite any arrangement of frames, but one system may have a greater tendency to foster, retain, and spread the disease than the other. We are well aware of the advantages claimed for the 'hot' system, but it has often struck us as very remarkable that it has never been introduced—to our knowledge—into America, or, at all events, has never obtained favour there, the hives of this nation, foremost in the race of modern apiculture and in the application of scientific discoveries and resource thereto, being all built on the 'cold' system. The 'hot' advocates, no doubt, will retort, 'Nevertheless foul brood prevails to a greater extent there than here.'

Reversible Frames.—Mr. Pond writes on these in the *A.J.* thus:—

'When the matter of reversing frames was first presented, I became quite enthusiastic on the subject, and gave the opinion that they would be, or should be, universally adopted. A single season with them taught me that I was wrong, and that the benefits claimed by their use was not in accordance with natural law, and could be far more easily attained without the trouble and expense of fitting over frames, as would be necessary in order to adopt the plan. The queen will not use store-combs in which to lay her eggs, but only such cells as are of the regulation depth. Reasoning from this premise, and on the further ground that the attempt is always made to put honey *above* the brood, I decided that any plan that would keep the upper part of the comb at just the correct width, viz., seven-eighths of an inch, would at once cause the cells to be filled with eggs, and, as a matter of course, the stores to be deposited in the sections above. The question then arose, How can this best be done? Shaving off the combs I found to be too much labour, but upon testing the idea of putting the frames nearer together, I found the plan was a success. If the combs are placed just so near together as to leave a bee-space between them, and allowing the whole comb to be seven-eighths of an inch wide, no trouble will be found in keeping the upper rows of cells filled with eggs, and if sections are in place the bees will be found to occupy the sections whenever there is honey to be gathered and stored.'

Will our readers kindly understand that subjects introduced under this heading are not intended to be controversial? There are numerous matters which, although they cannot, strictly speaking, be classed under 'Useful Hints,' yet are of great interest to bee-keepers, and when such are not brought under notice in other departments of the *Journal*, our desire is to call attention to them, in no partisan spirit, but for the advantage of all; and on such subjects we have neither the time nor the inclination to enter into controversy. In endeavouring to guide our readers aright in these matters, we shall be careful, as far as possible, to infringe no personal interests.

JOTTINGS BY THE WAY.

It is well known that the late Rev. H. R. Peel took a great interest in all matters which tended to the well-being of the working classes. He founded, and subsequently became the president of, the Working Men's Club at Handsworth, near Birmingham, the committee of which have recently, by the consent of the rector,

erected a handsome tablet to his memory in Handsworth Old Parish Church.

It may be interesting to those who have read Mr. Grimshaw's paper in the January 28th number of the *Journal* to know that there is an edition of the *Insect Architecture* by John Rennie, probably of later date than that referred to by Mr. Grimshaw, edited by the Rev. J. G. Wood, who made considerable additions to it. The quotations made by Mr. Grimshaw, as at pages 148, 153, 156, 143, and 144, may be found at pages 164, 169, 172, 160, and 161, of the present edition of this very interesting little work. The title bears the imprint of Bell and Daldy, 1869.

Mr. H. E. Roberts, a most successful Hertfordshire bee-keeper, will shortly embark for New Zealand. We wish Mr. Roberts every success in his new sphere of labour. If he does not forget in his adopted home his early love, we should be pleased to hear of his success in bee-keeping.

'Amateur Expert' writes:—'We shall be troubled with spring dwindling and dysentery this season, unless I am agreeably mistaken. As a cruel commentary on all the *gush* about the superiority of skeps and the let-alone system that we are hearing so much about in some quarters, my skeps are smothered in dysentery—I never saw them in such a sickening mess; while my bar-frames, which I have taken great pains to keep well supplied with dry, well-aired quilts, are absolutely free from it. They have all been breeding for some time by undoubted signs, but I have made no examination as yet.'

We are obliged to Mr. H. C. Whincop, 6 Cross Street, Finsbury Pavement, for forwarding to us a sample of his hinges for hives. On page 208, Vol. XII., will be found an illustration of hinges similar in principle to those now received. The top half of the hinge is screwed to the roof, the lower half slips into a socket. When you desire to take off the upper storey the roof can be lifted straight up and the hinges come out of the sockets. They would be found of great service with double or treble-storeyed hives. Mr. Whincop's hinges are made of polished brass with bevelled edges, and are well finished off. They look quite ornamental on a well-made hive. The hinges are highly recommended by those who have tried them.

Mr. F. R. Erridge has sent us a piece of corrugated brown paper, which has been found very serviceable by chemists and honey-producers for packing bottles and other frangible articles. A correspondent states he has found it very useful as a material for smokers.

We have received from Messrs. T. B. Blow and S. J. Baldwin copies of their illustrated Trade Catalogues. The former extends to 60 pages; the latter to 48, and contains much interesting, sound, and practical advice to beginners in bee-keeping.

Mr. F. Cheshire writes:—'We have a *new* bacillus, and I believe the Rev. Mr. Brabey has another new one also; *i.e.*, new to our knowledge.'

ASSOCIATIONS.

NORFOLK AND NORWICH BEE-KEEPERS' ASSOCIATION.

The fourth annual meeting of the above Society was held on Saturday, January 30th, 1885, by kind permission of the Rev. A. C. Copeman, in the school-room, Old Post Office Street, Norwich, the Rev. A. F. Bellman in the chair. Present: the Revs. J. Blake Humfrey, S. P. Garrick, H. B. Johnson, H. W. Harden, and H. J. Coleman, Messrs. W. H. Back, W. T. Gedney, Captain Herring, F. T. Chevallier, J. O. Cattermoul, C. W. Middleton, L. Wren, and H. Beswick, Mrs. G. Day, Mrs. Wren, and the Hon. Sec. The annual report showed that the Society had increased its members from 245 to 278. The expert, Mr. Lilly, has been working hard amongst members in all parts of the county during the busy months of the season, and there is every reason to believe that much good and permanent work had been accomplished. The annual show of bees and honey was again held in connexion with the Norfolk and Norwich Horticultural Society. The manipulations and lectures in the bee-tent by Mr. Lilly, the expert, were well attended and much appreciated. One very interesting feature was the bee-driving by a little boy, son of Mr. Emms, the hon. sec. The balance-sheet shows a small deficit, which is owing to the heavy expense incurred by the continuous demand for the expert during the season. The report and balance-sheet were unanimously adopted. The following gentlemen were then elected to serve on the committee for the ensuing year: The Revs. H. F. Bellman, J. Blake Humfrey, H. B. Johnson, and J. P. Garrick, Messrs. R. Harvey, Mason, W. H. Back, J. O. Cattermoul, F. T. Chevallier, J. N. Aldridge, W. T. Gidney, C. W. Middleton, H. Beswick, Captain Herring, Russell J. Colman, H. H. Harnard, and J. L'Estrange. The Rev. J. Blake Humfrey proposed that Mr. J. J. Rue be hon. sec. in the place Mr. H. R. Emms, who had removed from Norwich, and that the thanks of this Society are due to Mr. Emms for his valuable services during his term of office; seconded by the Rev. A. F. Bellman, who spoke in very high terms of the efficient manner in which Mr. Emms carried out all details in working the Society up to its present flourishing state. It was thought that the expert should commence his spring tour as soon as the weather proved favourable.

ESSEX BEE-KEEPERS' ASSOCIATION.

The annual meeting of this Association was held at the Corn Exchange, Chelmsford, on Friday, January 22, 1886. Mr. G. H. Aubrey presided, and there were also present Miss Cheek, Mr. F. H. Meggy, Mr. E. Durrant, Mr. J. C. Chillingworth, Mr. W. T. Braddy, Mr. Chas. A. Christy, and Mr. W. Debnam.

Mr. F. H. Meggy read the Report, which stated that during the past twelve months 67 new members had been enrolled, while 39 had been removed from various causes, leaving a net increase of 28, the total number of members being 241. The financial statement was not so satisfactory as could be wished. This was caused by the increased cost of the experts' visits and grants for prizes. It was noticeable also that with a good increase of members the subscriptions were but 3*l.* in excess of last year. Visits to the apiaries were made by the expert, Mr. W. Debnam, in the spring and autumn, with the following results:—Spring skeps examined 320, bar-hives 505, other hives 53, total 878. Autumn, skeps examined 160, bar-hives 294, other hives 10, total 464. Colonies found dead in skeps 15, and bar-hives 7. The number of members of the Association visited were, in the spring 162, and autumn 86. Illustrated lectures were delivered by Mr. Durrant at Bradwell, Colchester, Stock, Sandon, and Good Easter. The committee were indebted to Mr. Durrant for delivering these lectures free of expense. The bee tent had, during the summer months, attended various towns in the county. Prizes for honey had also been given at seven exhibitions. The rules of the Association had been revised, and were presented for confirmation. The resignation of the Hon. Secretary, Mr. Aubrey, had been tendered and accepted by the Committee with regret on October 3rd. A vote of thanks was passed in acknowledgment of his five years' services. Mr. F. H. Meggy was elected to the vacant office for the remaining portion of the year.

The revenue account for 1885 showed that the income for the current year had been 87*l.* 9*s.*, the expenditure 88*l.* 15*s.* 6*d.*, the difference reducing a balance of 2*l.* 17*s.* 6*d.*, with which the year commenced, to one of

1*l.* 13*s.* to carry forward to the next account; but gratuities of 2*l.* 2*s.* to the expert for assisting the Secretary, and of 7*s.* 6*d.* to the man employed to put up the bee tent, which it had been customary to pay, had not been granted this year. The Association had, besides, their bee tent valued at 8*l.*

The election of president, vice-president, committee, sub-committee, hon. secretary, district secretaries, treasurer, auditor, and two representatives to the British Bee Association, was then proceeded with, Mr. Meggy being elected as hon. secretary, and, in conjunction with Mr. E. Durrant, representative of the Society at the British Bee-keepers' Association. Mr. Durrant then moved, and Mr. Chillingworth seconded, a vote of thanks to Mr. Aubrey for his services. This was supported by Mr. Debnam, who spoke of the valuable aid Mr. Aubrey had rendered him, and this motion was heartily carried. Mr. Aubrey, in response, expressed his gratification that the committee had secured such an excellent hon. secretary as Mr. Meggy, and added that he was willing to afford him all the assistance he could.

For several years no county show has been held, grants for honey prizes being made instead, to local horticultural shows in various parts of the county. In accordance with a general feeling that the time had arrived for holding a county show again, a determination was expressed to bring this about in July or August next if the necessary funds could be raised. Brentwood and Chelmsford were named as the most suitable places. The secretary was authorised to appoint district secretaries, who should by virtue of their office be members of the committee, to represent the Association in various parts of the county and assist its work by offering advice and encouragement to bee-keepers in their districts, also as far as possible by obtaining new subscribers to the Association and donations to cover the expense of prizes, bee-tent exhibitions, or evening lectures in their own districts; and to advise the secretary on any matters connected with their district. Between twenty and thirty divisions were shown to be necessary, and the names of more than half the latter number who were willing to serve were submitted.—*From the Essex County Chronicle, Jan.* 29.

WILTS BEE-KEEPERS' ASSOCIATION.

The general meeting of the above Association was held at Trowbridge on February 4th. The attendance, as is too often the case, was small. The Rev. J. H. Dixon was unanimously voted to the chair. The Association has lost forty-two members from various causes, many owing to agricultural depression, but has gained forty-six, of which thirty are of the cottager class, or just above. The Association is still but very feebly supported by the county families. The balance-sheet showing a serious deficiency (though subscriptions had increased from 30*l.* to 34*l.* 8*s.* 6*d.*), it is found necessary to discontinue the supply of the *Bee Journal* at reduced prices to members, but an arrangement has been made by which all members forming groups of six may have it in turn at a small charge. The expert tour having proved so successful last year, it was resolved that another be arranged for this year. The Hon. Sec. was able to announce that the Lord Bishop of Salisbury had accepted the office of President, and would subscribe 1*l.* per annum; the Very Rev. the Dean of Salisbury, W. H. Long, Esq., M.P., G. P. Fuller, Esq., M.P., Professor Wrightson, President of the College of Agriculture, and Rev. V. H. Moyle, being added to the list of Vice-presidents—and three ladies elected on the Committee: nearly all the former members of the Committee —the Treasurer, Hon. Sec., country representives, and district advisers—were re-elected. Full particulars will be given in the report now in the press.—W. E. Burkitt, *Hon. Sec.*

BERKSHIRE BEE-KEEPERS' ASSOCIATION.

Expert's Report.

On the 18th of May I commenced my spring tour. The early spring having been by no means favourable to bee-keepers, it was not surprising that at this time it was the exception rather than the rule to find stocks in anything like supering or swarming condition, and I feel sure that in no previous tour has my visit been of so much use, as almost every stock examined I found it necessary to advise the owner to feed at once. In some apiaries examined scarcely a pound of food was to be found among perhaps a dozen stocks, and what was the result? egg-laying suspended! brood destroyed! and colonies thrown back at least three weeks, for the want of a small quantity of food just to carry them over a spell of bad weather. Many bee-keepers imagine that if they feed their bees during March and April they will be able to take care of themselves after that time, *and so they will if the weather is favourable*; but after bees have been stimulated early in the season, large quantities of brood are being constantly hatched out and eggs laid, it naturally follows that there must be a great demand for stores; now, it is just at this time it often happens that the success or non-success of a colony is decided *by their owner*. In most cases feeding is discontinued at the end of April or early in May, and preparations are made to put on the supers, with every hope of success, but if, just at this time, we get (as we often do) a week or more of bad weather, our busy friends are soon in difficulties, their stores become completely exhausted, and, instead of a flourishing colony, the bees are found starved to death. It is at this critical period that the most careful attention is required, and I would impress this fact upon members, that it is just this attention which will often decide between success and disaster.

I am pleased to report that there is a steady and increasing interest being taken in modern bee-keeping, especially among cottagers; the sulphur-pit is giving way to the super, although the former has by no means died out, yet the working classes are fast coming to the conclusion that careful attention to their bees is amply repaid.

I have this year visited, and in many cases examined, over seven hundred stocks of bees, showing a considerable increase on last year, thereby proving that Berks is keeping well to the front in the bee-keeping world.

The bee tent has been erected on eighteen occasions with the most satisfactory result, earning upwards of 20*l.*, and making a profit of about 5*l.* in favour of the Association. It is pleasing to point out that the tent is doing a most useful work, and that without any loss. In this department I have received valuable assistance from Mr. H. Fewtrell, one of our members who has this year gained a first-class certificate as expert.—A. D. Woodley, 26 *Donnington Road, Reading, January* 11*th.*

WORCESTERSHIRE BEE-KEEPERS' ASSOCIATION.

The annual meeting of the members of the above Association will be held at the Guild Hall, Worcester, on Saturday next, February 20th. The chair will be taken at 3 p.m. by A. W. Knott, Esq., Mayor of Worcester.

Selected Query.

No. 114.—*Do you consider Cyprian bees as superior to Italians?*

I have never kept Cyprians, and have only once manipulated them, but managed to survive. *Timeo Cyprios et mella ferentes.*—G. Walker.

For quantity, yes; but for colour of comb honey, no. Cyprians can be handled equally as well as Italians.—SAML. SIMMINS.

I consider them superior in every respect, and as easily manipulated, when thoroughly acclimatised, and carefully handled without the use of smoke.—GEORGE RAYNOR.

My experience of this race is not extensive, and I should therefore hesitate to recommend the Cyprians to any but bee-farmers, whose object is the production of honey, and who, with great and varied experience, will be most likely to give that care in manipulation which their irritable nature demands. The almost unceasing activity and the vigorous defence of their stores from robbers and the ravages of the moth make the race, in my opinion, one not by any means to be despised. At present, taking all points into consideration, I am decidedly in favour of the Italian in preference to the Cyprian race.—C. N. WHITE.

I have no personal experience, but from what I continually hear from a good many different sources I am satisfied that the Cyprian is the inferior, except in colour and—stinging.—F. ZEHETMAYR.

Cyprians will work in weather that neither Italians nor natives will face, they consume more for breeding purposes than Italians, and are even more erratic in queen-breeding and swarming, and for temper. The pity of it! The whole question of foreign bees wants looking at in the broad light of day.—AMATEUR EXPERT.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* MR. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

[115.] The value of honey imported into the United Kingdom during the month of January, 1886, amounted to 424*l*. [From the Statistical Office Return sent to E. H. Bellairs, Christchurch.]

AMATEUR HIVE-MAKING. (99.)

(*Continued from p.* 60.)

The roof is to be made to overlap the hive-sides, and will require two pieces $\frac{1}{2}$″ stuff, each 33″ long, 9″ wide at one end, and 4$\frac{1}{2}$″ at the other. One piece $\frac{5}{8}$″ stuff, 21″ × 9″, and one piece of $\frac{5}{8}$″ stuff, 21″ × 4$\frac{1}{2}$″, also four corner-pieces of triangular section, made by ripping a piece of 2″ × 2″ stuff through the opposite corners. Two of these are to be 9″ long, and two 4″; nail the sides outside the ends, and nail the four corner-pieces into the corners, keeping them $\frac{1}{2}$″ up, so that when the roof is on the hive it will drop down half an inch, being prevented by them from dropping any farther. And now for the waterproof cover, about which so much has been said (and very rightly, for nothing is more important) in the *Journal* lately. It will be seen, by reference to fig. 1, that the form of roof is flat, with a good slope. I prefer this plan, because the slope is the way of the grain of the wood, whereas, in the usual form of roof, with two slopes and a flat middle board, the wet runs across the grain, and any small crack will catch it. As one or two correspondents express their dislike to the use of canvas for a cover, here is a plan which will give a good, thoroughly waterproof roof. Get some well-seasoned match lining, cut sufficient boards to cover the roof-case C from side to side, and leave an eave all round of 1 inch. The number of boards will be ruled by the width; some matching being 6″, and some 7″ wide. Cut two strips 1″ × $\frac{5}{8}$″ × 34$\frac{1}{2}$″, and two 1$\frac{1}{2}$″ × $\frac{5}{8}$″ × 22$\frac{1}{4}$″: nail these four together, slightly bevel the top edges of the ends as to suit the slope of the roof, as seen in section on fig. 1, and note that the sides are not nailed on square to the ends, but on the slope. The top edges must be placed quite flush and true. Now paint the edges of this shallow frame with white lead, slightly thinned with linseed oil; take one of your cut pieces of match-lining paint it on the under side with white lead, and screw it with 1″ screws to the frame, of course keeping it square. Paint both the groove of the first board and the tongue of the second freely with the lead, and work the tongue into the groove, expressing the excess of lead; proceed thus with each board, putting two screws each end, and painting the edges which come together with white lead; fill up the beads of the boards with white-lead putty, and you may feel quite sure that your joints will not leak, the only risk is that the sun may crack the wood; and as this risk always exists I prefer the following plan. Cut your wood, which may be either matching or plain, to fit the above-described light frame without any eaves; nail or screw it to the frame, and paint all over with thick white lead (if matching is used, it must be primed and the beads filled up with putty), lay a piece of strong unbleached calico, 6 inches larger every way than the roof to be covered, on the white lead, and smooth it down, pressing it in every direction, so that the lead oozes through the cloth. Turn it over, paint the edges, and draw the calico round them, nailing it *inside* the frame with tacks. Nail one side and one end first, and then the other side and end, draw the calico tight, looking occasionally at the top to ensure that you are leaving no ridges or folds. When the white lead is dry, give two coats of paint. The edges inside trimmed off neatly.

The lift B, figs. 1 and 2, will require two pieces of $\frac{5}{8}$″ stuff, 31$\frac{1}{2}$″ × 4$\frac{1}{2}$″ and two of $\frac{5}{8}$″ stuff, 19$\frac{1}{4}$″ × 1$\frac{1}{2}$″, with four corner pieces, made as described above, each 4$\frac{1}{2}$″ long. This lift is required to give extra depth of roof for doubling, or for a second tier of sections. As will be seen by fig. 1, it is the same size as the outer wall of the hive, and therefore requires fillets all round to break joint; these are to be cut bevelled, as shown in section. Paint the surfaces which come together with white lead and *screw* together. This completes the hive and roof. Punch down all the nails and stop the holes with putty, dress all knots with knotting, prime and paint two or three coats.

An objection has been raised to the appearance of a hive with overlapping roof. This may be obviated by the addition of mouldings neatly mitred at the corners; the cost is very trifling, and the ornamental effect, especially where the mouldings are picked out of a different shade of colour, is surprising. Where fillets are used they may be formed of mouldings, and if dressed with white lead and screwed on from the inside there is no danger of warping and admitting wet.

The Frames.—Each frame will require one piece 17″ × $\frac{7}{8}$″ × $\frac{3}{8}$″, two pieces 8″ × $\frac{7}{8}$″ × $\frac{1}{4}$″, and one piece 14″ × $\frac{1}{2}$″ × $\frac{1}{8}$″. It is very important that the ends of the side-bars shall be perfectly true, or else when nailed the frames will not hang true in the hive. As this is so easily done with a circular saw, it hardly pays to cut your own wood, and the frames are best bought of a hive-maker having the proper appliances. Some makers supply frames with the end-bars mortised into the top and bottom rails, and these are better than if nailed. If

you elect to make your own, you must make a block thus: Take a piece of inch stuff 17″ long × 7½″, at each end fix, quite square, with screws, a piece of wood 7″ × 1½″ × 1″, keeping them exactly 14″ apart. This ensures your frames being the correct size outside. Across the board fix with one screw, on which it can turn, a piece of wood 13$\frac{9}{16}$″ × 1½″ × 1″. By placing your end-bars inside the two end-pieces of the block and forcing the turning piece against them; it, being $\frac{1}{16}$ too long, will keep them firmly in their places while you nail on the top-bar. A tap with the hammer turns it up and releases the frame, which is then turned over and the bottom rail nailed on. Before nailing, the top-bar must have a cut with a rip-saw made all along to within 2 inches of the other end. If you buy the frames, this cut, which is for inserting the foundation, will be made by dropping on to a circular saw, and will not extend through to either end. The distances are best kept with metal ends.

Section Racks.—To describe the making of these would occupy a great deal of space. Buy one and copy it. In selecting the pattern to copy, let it be long enough to take a backboard with springs to give room for removing the filled sections. If you prefer each row of sections in a separate case, on the system recommended by Mr. Raynor, make one side of each case or trough hinged to open and give ease in removing the sections.

Section Frames.—If you intend to use 4½″ × 4½″ sections, make your side-bars 8½″ × 2″ × 1″ full, or 1⅛″, the bottom rail 14″ × 2″ × ¼″. No top rail. On the outside of the side-bars fix lugs at the top 2″ × 2″ × ½″. At first sight these dimensions appear to give only ⅛ inch below the bottom rail, but it must be remembered that the metal ends raise the frames ⅛ inch, and as the lugs rest on the hive sides, the top of the sections, flush with the side-bars, will be flush with the tops of the frames, and the bottom rail will be ¼ inch above the floor. The bottom rail will spring sufficiently to release the sections, and their own weight will keep them in by causing the side-bars to press upon them.

Sections.—No one thinks of making his own.

Queen Excluder.—Make a light frame of ½″ × ¼″ stuff, 14½″ × 8½″ outside. Make a saw-cut along the edge of each piece ¼ inch deep, cut the excluder zinc 13¾″ × 7¾″, and insert it in the cut before nailing the frame, in the same way as a school slate is framed. Do not fix the zinc to the wood, a ⅛-inch clearance is left all round to prevent buckling, which would take place if the zinc had no room for expansion. Examine the zinc, and you will see that there is a burr on one side caused by the stamping. Place this side next the brood-nest.

Entrance Reducers.—Take a piece of ⅝-inch stuff 10″ × 1½″ and divide it by two saw-cuts meeting V-shape, as shown in *Modern Bee-keeping*. These two pieces lie on the floor-board, being kept in their place by four round-headed screws, behind which they can be slid to leave any size opening.

Stand.—Four bricks on edge, or four flower-pots, are as good as any. Let the floor rest on them and the hive on the floor.

Alighting Board.—This is a very necessary addition, not always provided. Take a piece of small-hole perforated zinc, of the kind used for meat-safes, 19″ × 12″, frame it as described for the excluder, put two hooks in one edge and two eyes on the edge of the floor-board, so that the zinc alighting-board slopes down to the ground for the weary or chilled bees to crawl up if they drop short of the hive. The perforated zinc will be always dry.

This completes the whole hive, but as the outer walls are both higher and lower than the inner, one hive cannot be placed upon another for doubling, nor is it necessary to use so cumbrous a plan. If the doubling system is desired make a plain box 8½ inches deep by any multiple of 1$\frac{9}{20}$″ long, into which the frames of the second stock can be lifted and placed on the frames of the first.

When the hive is painted and ready for use, the spaces between the walls can be filled with cork-dust and the slips K provided for the purpose laid over it resting on the top ends of J. To prevent accidental raising the hive from the floor, it will be as well to put two screws on each side through the outer walls into the edge of the floor. Let them be brass: iron screws will rust in and become immovable.

It will be found an advantage to have the floor removeable at will. There is one thing more which is as well to provide, and that is, ventilation in the roof. A few ½-inch holes made at each end of C with a centre bit and covered inside with perforated zinc, and with a sloping piece of board or tin outside to turn off rain, will be all that is required.

It will be noticed that only the sides are double. The front and back need not be double, as in wintering it is intended that the bees shall be confined between the two division boards, pushed back far enough to leave an ante-chamber, exit being given by opening the swinging door provided in the bottom edge of the dividers. Another use of these doors is to give access to a feeder at back of hive. In fig. 5, H 1 and 2 should have been shown projecting below G as described in context.—F. L.

DRONES.

[116.]—In answer to 'Bee Man' in *Journal* of Jan. 17th, I notice you say that the presence of drones in December indicates either that the hive is queenless, or else the queen is too old to perform her duties. I think there are exceptions even to this rule. For instance, I had a stock of bees in the end of October 1884 without a queen, but plenty of drones, so I united some condemned bees and a queen with them, and the drones were allowed to live till the following spring, when the other bees went on well and did me good service; in fact I have the same queen now.—J. Burman, 4 *Mill Street, Leamington, Feb. 5.*

DRONES AND THEIR USES. (100.)

A Protest against the Prince Consort Theory.

(*Continued from p.* 60.)

The strongest evidence of all, however, is the fact that amongst social insects the reproductive individuals always leave the nest and fly out into the open air before pairing. Among the termites the numbers to be seen on the wing at such times are so striking that observers have compared them to a heavy fall of snow.

To sum up, then, we see that from the drone's view of the problem the prince-consort theory is incorrect, as it makes suicide the object of his existence,—an object, too, which is accomplished by a very small minority of the drones. Although, from the queen's standpoint, it is at first sight plausible, yet the eventual result is only a choice of evils, for in-breeding is mischievous, and if a drone mates with a foreign queen he is not merely useless to his own hive, but he may even *injure* them by increasing the severity of their struggle. A little reflection will show that this applies equally to all classes within the hive. If, then, we still cling to the prince-consort theory, we are reduced to the absurdity of believing that the drone is kept to render services which, when rendered to his own sister, are the ruin of the hive which reared him. For whether the increase in the severity of the competition resulting from the drone's mating with strange queens, by necessitating a correspondingly increased efficiency to cope with it; and whether his perpetuating the existence of other colonies, which in their turn may supply his own with

drones be beneficial; or if not, at what point it becomes injurious is an open question. In either case, however, *this* is certainly not the reason why he was reared, and so need not be here discussed.

Before finally dismissing the prince-consort theory, I wish to ask its supporters this question,—In all other matters, such as honey, comb-building, brood, and queen-raising,* the bee is strictly economical, and yet she strives with might and main to rear a large quantity of drones, although a few dozen would be amply sufficient for this purpose, and protests against our interference in this matter. How, then, can the advocates of this theory, whether believers in evolution or in fixity of species, explain or palliate such senseless extravagance? What is her object in it?

In a future paper I hope to offer a new explanation of the riddle, and to vindicate the drone's character at last by proving that during the honey harvest he is not an encumbrance to the hive which produced him, but a gain in the direction of increased economy and efficiency. I also hope to show that destroying the drones at this season is not only as cruel, but as foolish and pennywise a policy, as destroying the workers themselves.—STUDENT.

FOUL-BROOD.

[117.] Since I last wrote to the *Journal*, much has been said *pro* and *con* in reference to this matter, while my continued investigations into the nature of bee diseases have brought many new facts to light. My present object is not to refer to these, but to draw the attention of the readers of the *Journal* to an article appearing in the *Bulletin de la Société d'Apiculture de la Gironde*, of November last, and written by no less an authority than Mons. A. Durand. The translation of this article I append beneath. It will be seen that Mons. Durand verifies my position completely, at the same time that he directs attention to camphor as yielding admirable results if the diseased brood be *removed*.

Two points that are personal, I also desire to canvass. When I first wrote in reference to this disease and its cure, I stated that I had arranged with two dealers for a small royalty, with the double object of securing the correct article to the purchaser, and also with the idea of partly providing funds for continuing extensive experiments. The result has been disappointing. The profit that has reached me has not actually paid the postage-stamps employed in the tremendous correspondence involved. The reason of this I can hardly explain in the pages of a public journal, but henceforth, I have no more to do with the commercial side of this question, but will guarantee Mr. Holland's phenol, if the purchaser would thus feel more satisfied regarding it.

The second point is this: although I have introduced germs of every kind into my apiary, and have recently destroyed three stocks by experimental treatment, all disease is so completely banished that I cannot even furnish a speck of *Bacillus alvei* for work I am now doing in conjunction with Dr. Crookshank in the Physiological Laboratory, King's College. (I am also busily cultivating at home, so that all specimens received will be at once started in growth and reported of in the *Journal*.) This is some evidence that foul brood is curable. The stocks were destroyed by experiments with mercury salts, which are said to have been successfully used in America. It is quite unlikely that any of the readers of the *Journal* will touch them, but lest any should feel inclined, I strongly advise the contrary. Even if manageable and effective, they are in the greater number of cases so extremely deadly, that their employment might lead to some sad, even fatal accident, which would damage in no small degree the reputation of honey as food. In my difficulty will some of my readers kindly favour me by a few cells from a decidedly foul-broody hive?

Especially any unusual behaviour on the part of bees which might be supposed to indicate disease would command my best attention if I were supplied with a few specimens (living if possible). Our American brethren have amongst their stocks a germ disease which I well made out nearly two years since, and yet to the present hour they are clinging to the fallacy of poisonous food and I know not what to explain the observed facts. We also are not yet alive to the extent to which micro-organisms cause abnormal behaviour on the part of our colonies, for it is my conviction that we are far from the end of the discoveries that may be made in this direction, and none will, I trust, feel nervous when I state that yet another distinct disease has just come to light. Although it is in many points quite unlike foul brood, I am sanguine that the treatment curing the one will be equally effective against the other. How passionately I desire that it and all other bee diseases may be banished, for these are the most evasive and as yet the most terrible enemies of apiculture.

It is my hope to work out this new point during the coming spring, so that I may include it in the practical section of my new book.—FRANK R. CHESHIRE, *Avenue House, Acton*.

ABSOLUTE PHENOL AND FOUL BROOD.

In the earlier days of the month of July last the presence of diseased larvæ was verified in a hive of the apiary of the (Apicultural Society) *La Société d'Apiculture de la Gironde*. On the 16th seven combs were almost entirely filled with foul-broody cells. The very characteristic malady was recognised by all the persons who assisted at the course of lectures. I removed from the hive the four most seriously affected frames, as well as the useless combs, containing more or less honey, and commenced feeding immediately with the following: A half-litre of honey thinned with water, with $\frac{1}{10}$ in capacity of phenol No. 2† (the remedy No. 2 is composed of one measure of phenol with twenty of water, and it is this remedy which is mixed with the syrup in the proportions of one in twenty). By the evening of the next day the bees had taken all the syrup, but the feeding was similarly continued every two days for a fortnight, and on Thursday, the 30th, the hive was opened in the presence of those persons who were interested in the operation, and the most incredulous were obliged to submit to the evidence; in fact all the foul-broody combs which had remained in the hive were full of honey, all trace of decomposing matter had disappeared, the laying of the queen had been considerable, the brood was regularly sealed and in dense patches, and the bees were unusually active. This cure publicly made, and which is not the first achieved by absolute phenol, excited amongst the bee-keepers present the desire to procure for themselves easily absolute phenol, and at the cheapest rate.

Ordinary phenol is a watery and alkaline solution of impure phenic acid, contaminated with coal oil. By absolute phenol it is probable, if not certain, that Mr. Cheshire, the author of the treatment, intends phenic† acid crystallised in white needles, called indifferently carbolic acid, phenyl hydrate, &c. (Codex).

* My experience is that bees do not rear more than a dozen young queens at a time, as often as not only two or three, and this although success or failure means life or death. This is rather a contradiction to the evidence of the combs as generally understood. I have found a larger quantity of queen-cells and cups built in a season, but owing to a change in the workers' plans the greater portion have never been used. A change in the weather, the loss of a portion of their stores, a sudden failure of their harvest, or an enlargement of the hive, would suffice to account for the change. Compared with this rigid economy in queens, the profuse expenditure in drones is somewhat startling, especially when we consider that the bees cannot help knowing of the proximity of other hives, each with its own quota of drones.

* These proportions and this method are derived from my directions.

† Phenic acid is the equivalent of phenol.

Pure phenic acid is soluble in alcohol and glycerine, but, according to many chemists, insoluble in water; above all, four parts of the acid to one of water. However, a chemist of Bordeaux has tried and succeeded in the solution. He weighed out into a flask 10 grams of distilled water, and to this he added 40 grams of pure phenic acid. This flask was placed in a water bath at 50° Centigrade. The solution was complete in five minutes, the water registering at this moment 85°. This aqueous solution is stable without crystallisation, even at a temperature of 15°. Phenol is an extract of coal-tar at 185°, and the obtained product, which appears to be the 'absolute' of Mr. Cheshire, preserves some taste of its origin.

This remedy aginst foul brood is sovereign, and its effects are beyond contradiction; but it is only effective during egg-laying, and the more numerous the brood the more sure and prompt is the cure.

In autumn it is necessary to have recourse to another remedy—salicylic acid. Camphor in bags placed under the brood-chamber produces the best effect. M. L'Abbé M., a distinguished apiculturist, to whom I had advised camphor, announces to me that he has obtained surprising results. Two of his colonies have been cured by this remedy, which has been pointed out to us by a correspondent of the *Journal d'Apiculture de la Suisse Romande*, a journal of which Monsieur E. Bertrand is proprietor, and to whom we owe the knowledge of the treatment by salicylic acid more recently than by absolute phenol.

Madame Jarrié has pointed out a remedy for the treatment of foul brood by camphorated syrup, but she has neglected to give the proportions for the making up of the remedy; should these lines meet her eye we trust she will fill up this involuntary omission. Nevertheless, I have tried this remedy tentatively, and have obtained with two affected hives the best results. To one I gave syrup, into which I had put pinches of camphor in powder, and to the other syrup, to which I had added some drops of camphor dissolved in alcohol. The bees greedily consumed these foods in spite of their pronounced odour. For the success of this method, above all at this period of the year, *it is necessary to remove the diseased brood*.—A. Durand.

DRYNESS OF HIVES.

[118.] I am at one with 'A. E.', as regards adopting zinc, calico, &c., as a covering to the wood roof of hives; and a few words as to my method, size, and shape, may not be out of place at the present hive-making season. I use 11 inch pine, three deep saw-cuts making four boards. I make the body of my hives 24 inches long by 18½ inches inside, and 11 inches deep; legs I cut 17 inches, taking off a wedge-shaped piece 7 inches long, thus splaying the legs to obtain great stability, and also allowing the top part of the leg to go up inside each corner and still make the hive more substantial as besides the nails to hold the four pieces forming the hive body, the mortice of the leg can be nailed to the hive and then the lining nailed to the mortice from the inside; then in the splaying the notch forms a good seat for the bottom of body to rest on, and with a fillet bevelled to a sharp edge and *well coated with paint* at the back before it is nailed on. The leakage of wet and consequent damp is often caused by not attending to the joints at the time of making; every one should be well painted before nailing together, thereby preventing percolation of wet after the hives have borne the brunt of a few years' wear, and at the same time giving the putty a good foothold. My cover I make 11-inch ends at centre of gable, and 8-inch sides, giving ample room for a box of ordinary frames, or brood frames for extracting, or abundance of room for two crates of sections working on the storifying system.

Of course, my hive is flatter on the roof than some hives are, but not so flat as 'Neighbours'' is limned on front page of 'ours'; more after the pitch of roof of '"Walton's" Muskham Hive.' I make it a rule to select the soundest pieces of board for the roof and also free from knots, running a groove on each under edge of top piece that covers the ridge—with fillets bevelled to sharp edge, and well painted before nailing, to cover the joint between hive body and cover; and I have never been troubled with any drift of wet or snow into my hives that has been made on the above lines, although my apiary is in a very exposed situation, from south and south-west. The advantages of the above hive must obviously commend themselves to any practical bee-keeper. —Woodleigh.

DRYNESS OF HIVES.—CAMPHOR.—BEE STING.

[119.] This is a subject of great interest and importance, both to hive-makers and their customers, and, I think, with 'Amateur Expert,' that roofs of hives ought to be constructed of wood only, and yet meet the requirements if made properly and certain points attended to, not the least important being to paint thinly with more coats in preference to few and thick.

'J. T. H.' (p. 39) has described exactly my idea of a simple, yet effective, roof, though the groove under the eaves is unnecessary, the narrower the boards the less liable to shrink and swell, even if we have to use six instead of four. Flat boards on the top, and fillets, or plinths, I have quite discarded, they may add to the appearance, but sooner or latter will certainly be a source of trouble. The hinge referred to, on the same page, was exhibited in 1879, at the Kensington Show, on a hive by Messrs. Green & Sons, and mentioned by Mr. Cheshire in the *Journal of Horticulture*, at that time as 'a very convenient form of hinge;' it has been improved since then, and I believe several hive-makers have adopted it.

I am very pleased to find Mr. Cheshire is recommending camphor as a specific for *Bacillus* disease. (I guess we must not say foul-brood now.) I can testify as to the efficacy of the phenol treatment, but in severe cases, I believe the queens are often diseased, which may account for some failures so called. I always try and give them a fresh, healthy queen, if it looks like a 'doubtful case.'

In July, of last year, I placed some camphor under one corner of the quilt of a diseased stock that was too far from home to attend to with phenol; I examined in September, and found very little, if any, disease, renewed the camphor and wintered up, am hoping to find them perfectly free next month; of course, this is but a single experiment, and other cases might not yield in the same way, but I really think it is worth a trial, if there is nothing but simplicity to recommend it.

Mr. Grimshaw's paper on the 'Bees' Sting' is interesting, and I must confess that I lean toward the theory of it being an aborted ovipositor. I should be one of the last to find fault with Nature's laws, but I have often thought it seemed unfair, that the wasp, a comparatively useless insect, as far as we can judge, is enabled to use its sting without detriment, while the poor little bee must sacrifice its life in the same act. I am of opinion that the reason why the vicinity of the eye is a part so often attacked is because the involuntary act of blinking attracts the attention of angry bees, such bees often *seem* to sting without giving themselves time to alight and get disturbed thereby.—Roland Green.

WASPS.

[120.] In the *B. B. J.* of Jan. 7th Mr. Pridmore gives us an interesting account of the destruction of a large number of queen-wasps. It is surprising what might be done in this way. Last spring a man near here killed thirty in one evening, and received one penny each for them. I killed nine on one morning myself, and many during the season in single ones; but the largest takes I have had were in one case 1000, and in another 500. These figures will, of course, appear enormous to some, and for that reason I have preserved the last-named

number in spirit to convince the doubting. The way I obtained so many was by taking large nests; smaller ones have of course a proportionate number. By taking a nest I do not mean simply blowing it up with powder, or digging it out and breaking it to pieces, thereby scattering queens abroad instead of destroying them. My method is to dig around it and lift the nest bodily, and tie it in a large handkerchief, thereby securing all the wasps, or nearly so (in daylight, of course). By contrivance you need lose but very few workers, and those can be secured in the evening or next morning congregated at the vacant spot.

I have some of the finest specimens of perfect nests taken in this way in my possession any one could wish to see. One is in the shape of a flat fish, and has been supposed by many who have seen it to be a petrified fish. It measures twenty-seven inches in length, and fourteen inches in breadth. Another resembles a huge cocoa-nut; it was taken from an excavated mousehole. It measures about thirty-three inches in circumference, and twelve inches in height. I have several other specimens, all differing.—J. J. Ashford, *Expert Dorset B. K. A., Blandford, Feb. 2.*

SPRING STIMULATION.

[121.]—Give me, an old bee-keeper of five-and-twenty years' standing—a local representative of, and one of the largest bee-keepers in, my county—just space enough to endorse every word of Mr. Lingen Seager's note, and to score it with a golden line, viz., 'I have ceased to believe in spring stimulating, and have found those bees do best which have had a large store of honey left for winter and spring use, with plenty of room for natural expanding of brood.'

Is it not written in the chronicles of my Rectory how I nearly brought my old cook some years ago to a timely or untimely end with my new syrup can? Do I not hear her now in fancy 'dratting them beas' many times in the day, and declaring to her mistress how often 'she had a-stuck to her chair' from 'maister a-sticking everything in her kitchen, all for them beas?' And for what end? Why, only for the bees in their mistaken gratitude to remove me the said syrup from some secret cupboard of theirs months and months after, by popping it into the sections, to my great disgust. Honey is cheap enough, goodness knows, and why not save our labour and time, and the stickiness of our cook's tempers, and let them eat the labours of their own hands, and that, too, with greater strength than if sugar fed?

Some two or three years since I astonished my friend Kempe, the Vicar of St. Breward, in Cornwall, one of the best and cleverest bee-keepers I know, by my slabs of honey and quantities of bees in the early spring, all done by the 'let-'em-alone' system. My bees have given me over half a ton of honey last season, and I am sure I have left them nearly as much again (not anticipating any loss thereby), with plenty of combs to move about on if they so list.

I quite rejoiced when I saw Mr. Lingen Seager standing up for the 'let-'em-alone' system, more especially as he is an authority, which I do not profess to be. I tender him—and I am sure your correspondent 'J. P.' will also—my heartiest thanks. I could tell you some amusing tales of my bee-keeping adventures in these remote wilds of north-west Devon since I left Wiltshire. —Rector, *Buckland Filleigh.*

[Our readers would be pleased to hear them.—Ed.]

COMB SECTION HONEY. [31.]

[122.]—One great difficulty with cottagers in these parts (and certainly not with them only) is want of time. If labourers go home to dinner, and live fairly near their work, they may have half an hour at their disposal at midday; after that they must wait till evening, and bees will not suit their proceedings to our convenience.

I am surprised to find 'C. H.' [41, p. 18] in the neighbouring county making so very broad a statement respecting the sale of comb honey in sections, but I should certainly say from my experience that packing is a very serious obstacle to getting rid of supplies. A crate full will travel fairly well, if not too late in the season, and carriers are not too rash, or smaller quantities may be taken short distances; but not many cottagers will have sections in number worth the notice of dealers, or time to pack and convey a few. A cottager's wife goes to town 'a-shopping.' She 'gets a lift' and takes a dozen sections in a basket. At the end of her journey half of those are damaged, and she spends hours in placing those that are saleable. It is market-day, and people are too busy to attend to her, or they don't care about honey, or they bought of some one the day before. A friend says to me, 'If you have any spare sections I wish you would send me five shillings' worth.' I will with pleasure, but the job is to get a little wooden box of exactly the size you require, or to secure the lot in thick cardboard, and the time required is a more serious matter still, while as for carriage, on wheels and by rail, it must absolutely be delayed till a suitable opportunity occurs, if the article is not to turn out 'all of a mash.'

I think the establishment of local depôts ought to be seriously considered, whether in connexion with or independent of the Honey Company, and I shall be anxious to know the result of my friend Mr. Griffin's venture.

But if at last cottagers go in for run honey only, what will they think of the work which Mr. Neighbour cuts out for them [36] [3] if they would believe that their honey is 'ripe!'—South Cornwall.

COUNTY ASSOCIATIONS.

[123.]—There can be no doubt that it is 'rank heresy' for 'South Cornwall' to 'hint that we may be within an appreciable distance of the end of the work for which our Associations have been started;' and I hope that some county secretary will rate him soundly. At the same time many will sympathise with the feeling which appears to lie at the bottom of his heresy, and will suspect that there was a wee bit of rose colour in the editorial spectacles when the brave vision of the 'Greater Britain' was described. The County Associations are nowhere near the end for which they were started. They have, indeed, done much in the past; but they have far more to do in the future. As to the past, they have to take the lowest view, immensely increased both the production and consumption of honey, and if they have diminished the gains of the few, they have been good friends to the many.

And yet they do not receive anything like adequate support. If it be unsafe to count upon a grateful return from an individual it is almost hopeless to expect it from a class. The many *will* demand a direct and substantial return for their subscriptions. Let us not call them hard names for so doing. Rather let us make allowance for diminishing incomes and increasing claims upon them, and let us see if we cannot *give* them what they ask for.

The great desideratum is a means for the ready and fairly remunerative disposal of members' honey. Honey fairs most certainly do not supply this. They are attended with too much uncertainty and risk. The Honey Companies have met, and can meet, the demand only partially. What is wanted is, not necessarily the establishment of a regular depôt, but some arrangement, in every market town, which members, and members only, may rely upon for the disposal of their surplus, even if that surplus be but a few pounds, and of getting a better price than the wholesale one which alone the Companies

can offer. I would not absolutely exclude even honey which had been taken by the brimstone method; for cottagers are slow to learn; but, of course, the same price could not be expected.

In the *Journal* for September 15th, 1884, p. 339, Mr. Anderson stated that he knew a man who intended working a truck with glass sides, in the streets of Weston-super-Mare, and that he expected to do a good business. Perhaps Mr. Anderson will be so kind as to tell us how the plan answered. I have often thought that a similar one might be profitably adopted in many places. And in other cases some grocer might perhaps be prevailed upon to expose members' honey for sale. There would always be the Companies to fall back upon.—CHARLES WOOD, *Winterslow, nr. Salisbury.*

[If our Editorial spectacles had too much of the rose-coloured tint we think it was an error on the right side. 'Hope springs eternal in the breast,' and we always like to look on the bright side. As well might we charge our Royal and County Agricultural Societies with neglecting the interests of their members, by not providing a remunerative market for their produces in these ruinous time, as attack the British and County Bee-keepers' Associations for the same remissness. The disease is not to be eradicated by such means. It lies far too deep for that. By all means let these Associations use every effort to create both Metropolitan and provincial markets for our honey. Towards the attainment of this end we must *educate* our people to eat home-produced honey. This we are endeavouring to do, but it is not to be done in a day. Hope on, and work, and success will come at last.—ED.]

REMOVING BEES.

[124.] We often hear of the extreme precautions necessary in the case of removals—careful and steady methods by water, and by larch-pole hand-barrows, but rarely by the rough and tumble chances of the railway journey. I purpose therefore to give you a few details of a recent trip made by bees from Boulogne to my residence in central Yorkshire, with their cost of transit, so that more confidence, perhaps, may be given to those who are in some trepidation as to trusting their little friends in the hands of the uninitiated for a long journey. Late last September a trial stock in a bar-frame hive was prepared for travelling by having a strip of perforated zinc tacked on in front of the entrance; two quilts covered the frames, which were fastened in their places by four strips of wood nailed round the edges; strips of wood were also nailed together round the hive to keep it on the floor-board, and two nails driven into the rear end prevented the same from sliding either backwards or forwards. Now as, in view of this journey, there had been no autumn depriving, the bees were ready. They crossed the German Ocean to Goole (a long voyage) in a fearful gale, accompanied by rain, which must, one would think, have gone far to destroy the colony by soaking the quilt. But such was anything but the case with this experimental lot, voyaging as they were to save themselves from the sulphur-pit,—condemned bees, indeed. From Goole to Staddlethorpe by train, then transhipped to Leeds, again at Leeds for Horsforth, and then on to a jolting country railway lorry for two miles, from which they were anything but tenderly removed into my garden during my absence from home. All this was done, Boulogne to Horsforth, near Leeds, in forty-eight hours, at a cost of 9*s.* 8*d.* for transit.

I naturally expected to find a mess composed of combs, honey, and bees, on opening out the hive the next morning, but was most agreeably disappointed, for, on removing the zinc doorway and turning up each of the four corners of the quilt separately, bees appeared at all points, and before even 'taking a look round' commenced turning out the dead, which amounted to some three hundred.

This done, they swarmed on the alighting-board, hanging in a beard-like mass down to the ground. I assisted them with a sloping board placed underneath them, and in about twenty-four hours they had slowly, but apparently unwillingly, re-entered their home. All the combs seemed quite in order, and as the bees in mild weather appeared on the side observation comb, retiring inwards on cold days, I judged it best to let the disturbance of the voyage suffice for the winter, and am assured that all is right by the quantity of bees enjoying a cleansing flight on mild days. I should state that the hive-cover travelled as a box containing spare frames and section crates. The next thing was to report progress to Boulogne, when a second stock and two empty hives were despatched, similarly prepared, and similarly unlucky as regards wind and weather, yet the bees arrived two days after despatch in even better condition than the first, for on 'uncorking' there was a grand vigorous roaring flight. Bearings were taken by the bees, but a hundred or so evidently got wrong on returning home, and entered hive No. 1, placed about two yards distant from their own; need I say there were a hundred or so corpses the next morning? Now the four hives, two stocks, and appliances came by steamer and passenger trains from Boulogne to Horsforth for under 1*l.*, and this I consider a lucky experiment. Perforated zinc might have been used instead of quilts, but in that case I anticipate the bees would have certainly perished by cold moisture: as it was the heat of the hive prevented this catastrophe. I trouble you with these remarks so that others may not be deterred from buying or selling stocks which have to travel considerable distances. We need not fear delay *en route*, for with bees, as with dynamite, the transit officials may be safely trusted to despatch the goods out of their hands 'all speed' without their being so labelled.—R. A. H. GRIMSHAW, *Crag Hill, Horsforth, near Leeds.*

COVERS FOR HIVES.

[125.] 1. I think if these were made with a curved top instead of the ridge shape they would be much more convenient as a table for the operator to place the sundries on when at work in the apiary. I have used such covers for years, and if they are covered with a piece of canvass before painting they can't let the wet through, and the top being curved the canvass is sure to fit close to the wood and only requires tacking down at the edges. I have mine made so that the roof or cover overhangs the hive-sides all round, and two plinths inside back and front, screwed on with two screws each. For winter these are taken off, when the cover will slip down over the hive, thus making the hive extra warm and very much reducing the height—a great advantage in rough weather. The eaves also protect the floor-board much better.—W. J. JOYCE *Farnborough, Hants.*

2. I find the most cheap and effective way of keeping the roof of my hives dry is as follows:—I give them a good coat of tar varnish on which I immediately sprinkle some good sharp sand, sufficient to thoroughly cover it, in about half an hour it will be dry and all the sand that does not adhere to the varnish may be shaken off; the appearance is very nice and the hive-cover will be perfectly waterproof. One that gave me a great deal of trouble last year, on being treated as above, is now perfectly dry.—JOHN SARELL, *Odcombe, Ilminster, Feb. 6th.*

3. I send sketch of a very simple cover (having no fillets) for hives which I have used for the last two years and have proved to be very satisfactory for keeping out rain and snow. The cover drops over the hive and rests on the porch in front, and at the back I screw a strip of wood just wide enough for the cover to rest on, it is therefore impossible for the rain or snow to get in, neither can the wind blow it off. It should be made so as to slip over the hive just easy so as not to jar and excite the bees; if the space

at the sides should admit bees (in case of robbing) a strip of flannel, or any soft material, could be tacked on inside which will keep it quite bee-proof. I have about a dozen hives and have had some trouble with the wet getting inside. In fact, one was so bad I had to remove all the quilts and replace with clean dry ones, but not so with my covers that slipped over the hives, which were perfectly dry, and I think another advantage it tends to keep the bees warm, being another outer wall.—J. P., *Kingsbridge, South Devon.*

5. Those who cannot afford costly hive-roofs will find my plan cheap and efficient. Give the roof a good coat of gas tar, while wet spread unbleached calico over it, at once give another coat, working from the centre of calico to the edges to get out all fullness. Three coats will make a good rain-proof roof. A pint of benzoline to two gallons of tar will make it dry quick and hard. I am much indebted to Mr. Simmins and others for their valuable information.—G. J. Lenny.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[95.] *Purifying Wax.*—Wax may be refined and the colour improved in the following manner:—Take half an ounce of the best roll annotto, cut it into thin pieces and put it in a clean copper or enamelled vessel with a pint of water, and boil it until it is perfectly dissolved; then add 14 lbs. of melted wax, and continue the boiling until the wax has taken up the colour and the greater portion of the water has evaporated, then, withdrawing the heat, carefully sprinkle over its whole surface about half a fluidounce of oil of vitriol; attention must be paid or it will froth up and boil over. The melted wax should now be covered and left for some hours to settle and cool slowly, care being taken not to disturb the sediment. All the impurities will be at the bottom of the cake and should be scraped off.—John M. Hooker.

[96.] *Material for Smokers.*—Old corduroy.—John J. Smyth.

[96.] *Material for Smokers.* (A. P. Howes.)—Out and away the best material for smokers, in my opinion, is corrugated brown paper (used by chemists and others for packing up fragile articles to go by post), it lights easily, gives a thick volume of smoke, and, if used dry, does not go out as long as there is any left to burn. I have tried peat, ordinary brown paper, fustian, &c., but nothing comes up to it. The only drawback is that it consumes rather quickly, but a good roll of it will burn for half an hour or more. I always have spare rolls of it at hand when about a long job.—F. B. G.

[97.]—*Trapping Birds.*—Have you used snares about your hives? If not, make a few with horse-hair and try them.—R. J. S., *Cavan.*

[97.] *Trapping Birds.* (Beeb.)—Being constantly on the watch, *Parus major*, or the larger tit, is the only formidable bird bee-enemy I can see, and a well-directed shot the easiest and most merciful way of getting rid of him. *Parus cæruleus* is not to be mistaken for the above, With me it lives mostly on grain, and seldom goes near the hive. —John J. Smyth.

[103.] *Preventing bees propolising section rack to top of frames.* (M. C. H.)—The natural instinct of the bees prompts them to cover the interior of their hives with propolis, and consequently the crate receives its share with the other parts, which fixes it firmly to the tops of the frames; the less surface exposed the less propolisation. Your rack of thirty-three sections would expose a greater surface than one holding only twenty-one; this latter size is quite large enough. By using strips of quilting between the bars and edges of the rack and top of frames, the rack can be removed with greater ease. Last season I used strips of American enamel cloth with even greater success than ordinary quilting. Some hives of bees use much more propolis than others.—W. B. Webster.

[103.] *Propolising Section Racks.* (M. C. H.)—The best preventative is to give the bees little or no cause for propolis by ensuring as good a fit as possible. Other remedies are as bad as the disease.—Amateur Expert.

[104.] *Myrobella Plum.* (O. B. T.)—The Myrobella plum makes an impenetrable hedge when properly attended to. It is rapidly becoming a great favourite for fencing purposes in England, as it grows well in the poorest of soils. Cattle are not likely to eat it any more than white thorn. —Hy. Dobbie.

[105.] *Fastening Oil-cloth.* (O. B. S.)—Yes, more or less, usually but slightly.—Amateur Expert.

[105.] *Will bees fasten oil-cloth down when used as a quilt in bar-frame hives?* (O. B. T.)—Yes, but not to so great an extent as with woven material; it is also more easily removed.—W. B. Webster.

[106.] *Foul Brood.* (D. A. Doudney.)—Rather a difficult matter to *prove*. I have always had a great aversion to frames *across* the entrance, as having turned up many hundreds of skeps found the greater portion of them—ninety per cent.—were not built so. I have never had foul brood.—Amateur Expert.

[106.] *Foul Brood.* (D. A. Doudney.)—Yours is a very strange coincidence. But that the difference in the position of the frames could pre-dispose the bees to develope foul brood is against all the ideas of such a development of the disease; if it were so, foul brood would be ravaging every apiary in the kingdom, both bar-frames and skeps, as now most bar-frame hives are made with the frames across the entrance, and the bees themselves build their combs in skeps very frequently after the same manner. Your cure of foul brood by the alteration is even more singular than your prevention. Cannot you trace the disease—if foul brood—to some other cause? try one or two hives this next season with frames across the entrance, and note result.—W. B. Webster.

[107.] *Entrances.* (H. Jenkins.)—Two entrances for the same colony except in the honey flow are harmful, causing draught and a far worse evil—robbing. If only opened at times, the dead bees would probably be carried out, but at the cost of bewilderment and probable robbing. Excluder-zinc does stimulate swarming sometimes.—Amateur Expert.

[107.] *Excluder Zinc and dead bees.* (H. Jenkins.)—There is a right and a wrong side to excluder zinc; one side has a slight burr, caused by the punching of the holes; if this side is placed innermost it catches the articulations of the dead bees, and so prevents their being drawn through by the 'scavengers.'—W. B. Webster.

[108.] *Bees in Bucket.* (Welsh Novice.)—Close drive as if it were a skep. You will have to 'drum' a little more violently, probably. But why drive them? Let them remain as a private 'Bligh Competition' of your own, cut a hole in top of bucket with a key-hole saw, and super if necessary.—Amateur Expert.

[108.] *Driving bees from Wooden Bucket.* (Welsh Novice.) —You can drive them in same manner as done from a straw skep; but the best plan would be to saw the hoops, taking care not to break the combs, and then removing each comb and brushing the bees off into a skep; placing the skep afterwards on the stand previously occupied by the bucket, in order to collect the flying bees. If the bucket is larger at the top than the bottom, you can break the attachments of combs by 'bumping,' and then brush bees back into bucket instead of using skep for that purpose.—W. B. Webster.

[108.] *Drive bees from a Wooden Bucket.* (Welsh Novice.) —Drive the bees into a skep in the ordinary way, *i.e.*, as from one skep to another. The driving pins must be fixed firmly in the bucket with a hammer, and the skep kept in position at the junction by two iron skewers pushed into the back of the skep, about four inches from the bottom, one coming out again at the back to keep the edge of the skep from slipping into the bucket, and the other coming out inside the skep to keep it from falling backwards. The only difficulty is in jarring the combs sufficiently to make the bees leave the bucket, it is almost impossible to do so with the hands. You had better use short thick sticks.—F. B. G.

[109.] *Draining Honey out of Comb.* (Welsh Novice.)—We doubt not that at this time of year if placed in a warm position it might, but even then it would be a great trial of patience. Sling it!—Amateur Expert.

[109.] *Will honey drain out of uncapped comb by simply laying it in a flat position?* (Welsh Novice.)—Yes, in the case of very unripe honey, and then only that gathered from certain flowers. It is of no use trying to drain ripe honey in such a manner.—W. B. WEBSTER.

[110.] *Advantages of Association.* (Welsh Novice.)—Ah! W. N., we are well-nigh ashamed of you. Where would bee-keeping, as you find it to-day, have been but for Association? What about Shows, Bee-tents, Experts, Weekly *Bee Journal*, and voluntary helpers to give you information, not to mention a score of other benefits as the result of Association?—AMATEUR EXPERT.

[110.] *What are the advantages of joining a Bee-keepers Association?* (Welsh Novice.)—First and paramount is your duty towards your neighbour, such being represented by the poorer class cottager, whose lack of education and slender purse prevent his gaining a knowledge of the craft without the assistance of his more well-to-do brethren; this, it grieves me to say, is very seldom thought of by would-be Association members, by far the greater number of such considering before joining, will it pay. I am frequently asked that question by well-to-do people when canvassing. Next in order come the advantages you derive by conversation at meetings with other and more experienced bee-keepers, and the different little wrinkles you get posted up in. Visits—usually provided by Associations—from an expert, at least once a-year, but frequently twice, spring and autumn, for the purpose of instruction and practical illustrations. The circulation of books and journals,—I ought to have put journals in the singular, as this is THE JOURNAL—devoted to apiculture for members' perusal; these and other minor advantages are sufficient to induce any lover of apicultural pursuits to join at once and enter into the well-doing of his Association with heart and soul.—W. B. WEBSTER.

[111.] *How is the best way to put a swarm in a Unicomb Observatory Hive?* (H. Barlow, jun.)—Towards evening remove a frame from a well-stocked hive with the mother-bee, and place it in the Unicomb Observatory Hive, brushing a few bees off another frame at entrance and allowing them to run in if there are not sufficient on the frame already placed inside. If you intend keeping the Unicomb Observatory Hive near the stock more bees must be put in, as the old bees will return to their companions; the stock must be requeened. There is not room enough for a swarm in a Unicomb Hive.—W. B. WEBSTER.

[111.] *Observatory Hive.* (H. Barlow.)—Place the combs into an ordinary bar-frame hive that they will fit, give the swarm as recommended in *Modern Bee-keeping*, or Mr. Cowan's *Guide Book*, allow the bees to work out the foundation or build their combs as the case may be in the bar-frame hive, taking care to keep the combs straight by changing their positions while being built; the hive must stand on the stand intended to be used for the observatory hive while this is being done, and the same flight-hole used, and when the combs are built—say, from six to ten days—much depends on circumstances, place the combs and adhering bees into the observatory hive and shake the few stragglers remaining in the bar-frame hive, in front of the flight-hole, and allow them to crawl in. If this seems too formidable a job for you—and it need not be—place the observatory hive on its permanent stand, fitted up complete, and well closed up and darkened, and shoot your swarm on a board propped up in front of the flight-hole, encourage them if necessary with a wing or a few puffs of smoke to enter and hope for the best, choose the evening if possible. You will find the work of comb building will be much slower by this method.—AMATEUR EXPERT.

[113.] *Extracting.*—By all means extract indoors, make sure the hives you extract from are securely covered down before leaving them, or it will cause very much fighting. Why not build a cheap garden-house?—THOMAS ROSE, *Lamcote, Radcliffe-on-Trent.*

[113.] *Extracting.* (D. P. O.)—Bringing the frames in a box and extracting in the house. But cannot you build a small shed near your apiary for extracting in? On no account try extracting in the open air near your bees or any one else's.—W. B. WEBSTER.

[113.] *Extracting.* (D. P. D.)—In a honey glut you may do it in a retired nook of your garden, at other times you must get under cover, or set up a temporary screen of network around you. You are unfortunately circumstanced.—AMATEUR EXPERT.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[126.] *Substitute for Smoker.*—Can anyone suggest a substitute for the smokers now in use, suitable for poor cottagers unable to buy 3*s.* 6*d.* smokers? The smoker is a great difficulty in the way of poor Irish cottagers, both as to price and the care that must be taken of it.

[127.] *Manipulating House.*—There is a house in my garden near the apiary which would be useful for manipulating in cold or wet weather, as I can easily warm it to summer heat. As I have to leave home often it is an object to me to be able to manipulate a hive at the right time, regardless of weather. Half the house is roofed with glass, and I am afraid the bees would all fly up to the light. Can anyone tell me how to work in such a house? Should the hive be left in it till night to enable the bees to return, or would they make their way out through chinks or under the door to the stand where the hive was before its removal into the house?—IRISH NOVICE.

[128.] Will the use of section boxes 1⅜ to 1⅞ inches insure a quicker filling and sealing of their contents than those of 2 in. width, and where can such be obtained?—JOHN J. SMYTH.

[129.] *Doubling.*—My bees have increased to twenty hives—five skeps and fifteen frames—double the quantity I require. Would it answer to double every two nearest to each other, so as to reduce them to half? and if so, when will be the best time to do so?—MAURICE ORMOND.

[130.] *Queen Rearing.*—I intend to swarm my bees artificially in the following spring in the usual manner. That is—when the hive is full of brood in May remove it from its stand to a distance, and at the same time take out two or three frames of brood and the queen and insert them into a new hive on the old stand with two or three frames of foundation or empty comb. The old hive of bees will then proceed to raise queen-cells; and now comes the point on which I wish to obtain information. If I allow a queen to be hatched, as I have at present only one hive, she will in consequence be fertilised by the drones laid by the old queen. Now as I wish to infuse new blood into the hive that is now raising a queen, without entirely changing the breed, which would be the case if I imported a strange queen, would it be practicable to procure a dozen or more drones of a good breed and insert them into the hive, just before the hatching of the new queen, so as to be ready for the wedding flight?—WALTER CAMPBELL, *Hornefield, Tottenham.*

[131.] *Chilled Bees.*—How long can chilled bees remain in a state of suspended animation and yet be revived by warmth? According to some statements a lengthened period may elapse, but that is not according to my experience.—F. L.

[132.] *Distance between Frames and Hive-floor.*—How great a distance may be left between the bottom of the frames and the floor of the hive? Root says ¼ inch is perfection, but he recommends ⅜ in. for fear of accidents. My hives leave ⅜ in. without metal ends—some of which would make the distance over $\frac{1}{16}$ in., and the least I have seen could make it fully ⅛ in.—F. L.

[133.] *Brazilian Bees.*—Can any one amongst your subscribers give me any ideas upon bee-keeping in Southern Brazil, south of Santos about 300 miles?—B. C. W., *Appleby, Doncaster.*

[134.] What are the points to be observed in the judging of black and foreign bees in an observatory hive at a show?—LOUTH, *Lincolnshire.*

Echoes from the Hives.

Shepton Mallett.—We had a very good season last year, and took upwards of 2 cwt. of section honey, which we easily disposed of among private friends at 1*s.* per lb. The bees have so far wintered well without extra feeding, and we trust we shall be blessed with another good harvest. I have not seen in your *Journal* a plan which is used in these parts successfully to prevent the queen ascending and spoiling supers. A piece of tick as broad as a man's hand placed across the middle on the top of the bars. The queen seems satisfied to remain under this. I mean to try it with a reversible hive this year. Queen excluders of perforated metal I have found obnoxious.—Owen B. Tyler.

North Leicestershire.—After forty-one days' incarceration the bees came out on the 12th inst., and, although the snow which fell on Jan. 3rd lay in considerable patches around, there was scarcely any loss, the sun being very warm and the air quite still: the thermometer stood at 41° in the shade. *Queen Wasps.*—Thirteen live queen-wasps, one dead one, and one live humble bee, were found hybernating under about a square yard of moss growing on the tiles of the north side of a porch. They lay close to the tiles, in cavities formed among the matted rootlets of the moss. At the time the moss was pulled off it was thoroughly saturated with water from melting snow, but the insects were all quite dry. The moss was in vigorous growth, and nearly ready to shed the spores.—E. B.

Wokingham, Berks.—For the last seven weeks the bees here have been confined by frost and snow to their hives, but at last we have had a cessation of such weather! Saturday, the 13th inst., was a glorious day, like spring, and our little friends took every advantage of it; each hive seemed to have the idea that they must make the best use of their time and swarmed out in thousands. I took advantage of the weather and had a look to see how they were off for stores—everything satisfactory. One hive that I have—as an experiment—fed entirely from a feeder since end of October with thick syrup, is in first-class condition. When put in hive they had not a single cell of stores.—W. B. Werster.

Dowlish Wake, February 12th.—What a glorious day for our pets, which as I write are thronging my snowdrop beds for pollen by *thousands*. This is the second time this season I have seen bees gathering pollen, namely to-day and on February 2nd, but to-day they are in right good earnest clearing out all accumulations of dead bees and rubbish from every corner of the hives, and in front of some there are literally heaps of such as the bees have so few opportunities of flying for several weeks. I have about forty stocks, and my apiary seems all life and activity, as if by magic after such inclement weather, which no doubt has saved a lot of energy. I notice two or three stocks that gave plenty of evidence of breeding all through December now seem the worse in point of numbers. I have not attempted to raise a quilt, nor do I intend doing so for a time, as I satisfied myself on the point of stores in October. I have not heard of any losses of stock yet, and as for myself I have never had any mishap, such as the loss of a single queen or the like, since I adopted frame-hives.—J. Churchill.

Lismore, Feb. 12th.—My bees have come well through the winter, including three stocks formed of condemned bees. Yesterday was gloriously sunny and warm, and there was a great flight in front of my nine hives. It seems curious, but I observed pollen going in very freely into the stocks formed of the condemned bees. Most of it was bright yellow; I fancy from the furze, which has now a good deal of blossom. Our crocuses are only just coming out, and the bees never seem to go near them much in my garden. Quantities of pollen were taken in by the condemned bees as late as November 24. I can see no pollen going into any of the other stocks. I believe if I had the courage of my convictions I should begin stimulative feeding in them, but I am afraid to venture on so bold a course.—Irish Novice.

Ringstead, Feb. 15th.—The bees, as far as I can hear, are in a good condition in this district; some of them are getting short of food, especially those that were made up of driven bees, the owners not giving them sufficient food in autumn. On Friday last, Feb. 12th, being a mild day, my bees (seventeen stocks, all in bar-frame hives), came out in great numbers for a cleansing flight. One of them is in a very strong condition. They went into winter quarters crowded on eleven frames, and they cover all the frames now. On the above date they were fanning at the entrance as if it were summer. The chaff between the inner and outer walls was quite warm, and the condensed moisture had run under the back dummy and stood in a pool. Surely they have sufficient moisture without using enamel cloth.—John Bull.

NOTICES TO CORRESPONDENTS & INQUIRERS.

H. Welch-Thornton.—*Aphidian Honey.*—Honey (so called) collected from aphides, is considered injurious to bees as *winter* food, but in the spring months, when flying freely and breeding extensively, it is harmless. If it is in sections or in comb in any shape, we advise you to place it, uncapped, *below* the brood frames. This can be done, in frame-hives, by using a square box, without top or bottom, 4½ inches deep, which should be placed, with the sections or comb, beneath the hive, when the bees will carry the honey into the combs above, and by swallowing and disgorging will improve its colour and quality. Strong colonies about the middle of next month, if the weather prove fine, will quickly dispose of the quantity you mention.

J. C. T.—*Direction of Sections.*—Whichever way the sections are placed the bees will build their combs in the same direction in which the foundation is placed in the sections. It matters little whether the sections are placed parallel to, or at right angles with, the combs beneath, provided 'starters' are used.

West Midlands.—*The Stewarton Hive.*—The Stewarton Hive has been successfully used in many parts of England very far from the heather districts. We have ourselves used Stewarton hives for a great number of years, and, although for some reasons we prefer the moveable comb hive, we would certainly consider the Stewarton very far in advance of the skep. If you will consult our back volumes you will there find the experience of many English bee-keepers.

Cape Colony.—Mr. Cheshire says that the bees forwarded are *Apis mellifica*, but that they have distinct variations, which he will be pleased to enumerate if a few pinned specimens are forwarded. It is exceedingly difficult to distinguish mere variations from specimens in spirit.

J. H., *Kent.*—*Foul Brood.*—Foul brood is not a necessary evil in bee-keeping. This disease has never occurred in many parts of England (see 'Useful Hints' in this number, p. 66). At the same time it should be borne in mind, that salicylic acid is a preventative of foul-brood. Its addition to the food can do no harm, and may prevent serious mischief.

D. H. D.—The bees have died a natural death—through old age.

R. J. S.—Willesden card can be had from Messrs. Spalding and Hodge, 34 Cannon Street.

C. R. S.—*Moving Stocks.*—The stocks could be removed safely in the manner described at this season of the year, if the road be not too rough, the hives placed on a good thickness of straw in a spring cart, and the journey performed at a reasonable rate.

W. Stokes.—It would take up too much of our space to give you the information you seek respecting driving

and transferring. We would rather refer you to Abbott's leaflets, *Modern Bee-keeping*, and Cowan's *Guide Book*.

H. W. H.—*Death of Queen.*—The death of the queen was not caused by her not having been fertilised in the autumn. We require more information respecting the bees than that given in your letter. Did all the bees in the hive dwindle away and die, or merely those forwarded?

MARCUS J. A.—There is no necessity for apprehension as to the queen; she is unhurt: but we would advise you not to repeat your manipulations until there is a necessity for them.

B. W.—*Two Storeyed Hive.*—The preferable plan would be to raise a portion of the combs only, replacing them with frames containing sheets of foundation, and filling out the upper hive by spreading the combs, and putting in sheets of foundation at intervals, as space is required according to the increase in bees.

NEW SUBSCRIBER.—*Taking Honey.*—Wait till the bees swarm naturally, and place the swarm in the Irish hive in the position of the old skep, which must be moved to a new location. The bees returning from the fields will augment the swarm; the young bees remaining in the skep will nurse the brood, which will all have hatched out twenty-one days after the swarm, when the honey can be taken without destroying any brood. 2. *Covering for Frames.*—Enamel cloth would be suitable at certain times of the year, or tick and three folds of flannel. 3. *Position of Section.*—In your long hive it would be allowable to put sections in the rear of brood-nest. 4. *Time for Feeding.*—By examination you might discover when the necessity arises. For stimulating you might commence six weeks before appearance of fruit-blossoms. (See opinion of J. M. Hooker on the best means of securing surplus honey in sections during honey season, p. 16.) 5. *Somersetshire B. K. A.*—Apply to the hon. sec., the Rev. C. G. Anderson, Otterhampton Rectory, Bridgwater.

CORRECTION.—P. 64, line 3 of Echoes, *for* post *read* frost.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' *whose orders amount to Five Pounds per annum, will be inserted Free.*

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
WREN & SON, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

BEE & FRUIT FARMING CO., Limited, St. Mary Cray, Kent.
BRITISH HONEY CO., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

BENTON, F., Munich, Germany.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

LYON, F., 94 Harleyford Road, London, S.E.

Apicultural Appliances for 1886.

Bee-keepers, and others, please note the undermentioned:—

BEES.—Now is the time to book Swarms for May delivery. The system adopted last season will be followed in every case this season: *i. e.*, the Swarm is so packed that no possible mistake can arise as to the presence of a Queen with the Swarm. Intending beginners please note:—Native Swarms, with grand Queens, safely packed on rail, 15/-.

CANDY (Salicylised), 6*d.* per lb., postage extra; 7 lbs. free 3/9. Stimulative Candy, superior to Flour Cake, reduced to 6*d.*

CANE.—For sewing Straw Skeps, 1/3 per lb., post free; much better than Briar, and cheaper in the end.

COMB FOUNDATION of Pure Bees-wax at current prices.

FEEDERS.—The DIVISION BOARD or DUMMY FEEDER maintains its position as at once simple and practical. No Frame Hivist should be without this form of Feeder, for Spring stimulative feeding, for Swarms, or for rapid Autumn feeding. A cheap, simple top Feeder, for Skep or Frame, complete with stage, &c., post free, 9*d.* An adaptation of Simmins' Dry Sugar Feeder, 8*d.* free; four Feeders, 2/- free.

HIVES.—Well made with seasoned yellow pine. Important improvements without complication. Prizes at every Show where exhibited last year.

HONEY EXTRACTORS, taking one, two, or four Combs, 10/-, 21/-, 25/-, and 30/- each.

METAL ENDS.—A cheap New Metal End will shortly be ready.

PLANTS for Bee-forage generally in stock. Limnanthes may be planted out to end of March. 1/- per 100, free; 3/6 per 1000.

QUEENS.—Choice young native Queens, 3/6 each from end of May. Carniolans, Cyprians, and Ligurians imported of best quality. *See Catalogue for particulars.* HOME-BRED QUEENS a *Speciality.*—Working an Apiary for this purpose, in a district where no other Hive-Bees exist, I have unequalled facilities for producing a large percentage of purely-fertilized Queens of any desired race.

SALICYLIC ACID, pure as imported, 1/- per oz. Should find a place in every household, as besides its utility in the Apiary it is invaluable for preserving Meat, Fish, Milk, Butter, &c. Receipts for use if desired.

SECTIONS.—American One-piece V-cut, $4\frac{1}{4} \times 4\frac{1}{4}$, best quality, at current prices, according to quantity. Dovetailed Sections, any size, cut to order.

SMOKERS.—Cold Blast, 2/6, postage 3*d.* Why pay more? These Smokers will burn in any position, and keep alight as long as any fuel remains. Unbreakable springs.

SUGAR.—Guaranteed from the refiners as Pure Cane and free from chemicals. Good for dry-sugar feeding. Candy or Syrup in 2 cwt. lots, 20/- per cwt.

TINS.—Patent Self-closing. A great success. Keeps Honey in splendid condition, perfectly preserving the flavour and aroma. Air-tight when closed, and easy to open. Sample, five Tins, free, 1/-.

VEILS.—Blued Woven Wire all round. Cool and comfortable to the eyes, not liable to rust. Post free, 2/- each.

WIRE for making the Veils, 1 yard 6 ins. wide, selvedge both edges, post free, 1/3.

ZINC QUEEN EXCLUDERS, and every other necessary appliance.

'MODERN BEE-KEEPING APPLIANCES,' an Illustrated Descriptive Catalogue, full of useful information. Post free, 1½*d.*

J. W. R. HOLE, Tarrington, Ledbury.

THE BRITISH BEE JOURNAL

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Editorial, Notices, &c.

PROPOSED BEE EXHIBITION IN LONDON DURING THE COMING SEASON.

The annual general meeting of the British Bee-keepers' Association was held on Wednesday last, it was of an intensely interesting character. The discussion on the various agenda was unusually prolonged, the time occupied being nearly three hours. The report of the meeting which we append will be read with deep attention. The discussion on the several motions was carried on with much animation. It had been feared by some that the sad loss that had befallen the Association during the past year through the decease of the former Hon. Secretary, the Rev. H. R. Peel, would have, to some extent, affected the well-being of the Association; but we are pleased to say that this apprehension needed not to have been entertained. The numbers of the members present were larger, and the interest in the proceedings more sustained, than at any previous annual meeting. This at least proves the deep hold which the progress of apiculture has taken on the public mind, and that the members of the Association are fully alive to their responsibilities and to the demands and necessities of the times.

Mr. Jesse Garratt very ably endeavonred to make provision for a fairly representative exhibition every year by extending the prize-list at the Royal Agricultural Society's Show. Probably the schedule, as now issued for the R. A. Show, could, as Mr. Garratt remarked, be considerably improved at a very small additional expense. The Committee will no doubt give this suggestion the consideration it deserves. Any improvement made at the present time must, however, be sustained in future years. It would not be desirable to arrange an extensive schedule for the R. A. Show in 1887 because no London show was held, and in 1888 to reduce the same to its former dimensions on account of a determination formed to hold a London show. An important Society like the Royal Agricultural could not be expected to tolerate a retrograde step of this nature.

Mr. Clay's motion was of a more specific character, seeing it deals with the exhibition for this year only. We cordially agree with it. The President's remarks were much to the point, showing that if an exhibition on an extended scale be arranged for this year in London, it should be thoroughly well done and energetically carried out.

It was proposed, if possible, that the Exhibition should be held in the grounds of the Royal Horticultural Society while the Indian and Colonial Exhibition was in progress. The meeting showed great anxiety to prove to Canadian and other exhibitors that British bee-keepers were alive to the present importance of apiculture; and they felt that this proof would be afforded by having a thoroughly good exhibition representing the present position and capabilities of English bee-keepers. They also hoped to be able to have the opportunity of adopting some means of showing their cordiality towards foreign bee-keepers by inviting them to some social gathering.—a conversazione, or in some other mode that might be afterwards determined upon.

As the funds of the Association were not in a condition to sustain the expense of the proposed exhibition, it was determined by the meeting to institute a Guarantee Fund. The sum of 200*l.* was calculated to be the amount that would be required. This was heartily entertained, and we are happy to announce that a sum of nearly 100*l.* was guaranteed by those present, including 25*l.* from the President. A noble commencement, which, we trust, will be generously seconded by bee-keepers generally.

We believe that the spirit exhibited by the meeting will animate the hearts of all bee-keepers in the kingdom, and prove that bee-culture in this country is rapidly progressing, and that its votaries are prepared to show that, if favoured with genial weather, the capabilities of this country for honey production are quite equal to all the demands which may be made upon them.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

The annual meeting of this Association was celebrated on Wednesday, February 17th, 1886, at 3 p.m., in the spacious Board-room of the R.S.P.C.A., 105 Jermyn Street, St. James's. The noble president (the Baroness Burdett-Coutts) occupied the chair, and amongst the large audience of ladies and gentlemen present were the following members of committees, county representatives, and supporters of the Institution:—Mr. T. W. Cowan, the Rev. E. Bartrum, D.D., the Rev. F. S. Sclater, the Rev. G. Raynor, Mr. D. Stewart, Dr. Walker, Captain Campbell, the Rev. T. Sissons, Mr. J. Garratt, the Rev. J. L. Seager, Mr. J. M. Hooker, the Rev. F. G. Jenyns, Captain Bush, R.N., Mr. R. J. Hinton, Mr. T. B. Blow, the Rev. W. E. Burkitt, Mr. Zehetmayr, Mr. F. H. Meggy, Mr. Baldwin, Mr. G. Henderson, Mr. Fox Kenworthy, Mr. Eastty, and others.

The Secretary read the minutes of the previous annual general meeting, which were confirmed by general assent.

The President moved 'That the report and balance-sheet issued for the year 1885 be received and adopted,

with a vote of thanks to Mr. Kirchner, the Auditor:' which resolution was seconded by the Rev. F. S. Sclater, and carried unanimously.

The Rev. J. L. Seager, in proposing a vote of thanks to the retiring officers and committee, said they well deserved that compliment, for their duties were very arduous. Mr. Meggy seconded the motion, which was carried *nem. con.*

The President moved a vote of thanks to the Council of the Royal Society for the Prevention of Cruelty to Animals for the gratuitous use of their Board-room for committee and other meetings. Her ladyship said it had been a great pleasure to the committee of the R.S.P.C.A. to be of assistance to the Association.

The Rev. G. Raynor, in seconding the vote, congratulated the members on their good fortune in being able to secure the use of a beautiful room in the best part of London for meetings. This concession was equal to a large subscription towards their funds. The objects of the two Societies were in a great measure identical, and the B.B.K.A. was happy in having so good a friend at court as the Baroness. The resolution was carried unanimously.

The Rev. E. Bartrum, D.D., proposed the re-election of the President, Vice-Presidents, Treasurer, Auditor, Analyst, Librarian, and Secretary for the year 1886, and remarked that the Association was deeply indebted to all of these officers for the unceasing interest they took in the prosperity of the Association.

The Rev. F. G. Jenyns seconded the motion, which was carried unanimously.

The President acknowledged, with hearty thanks on her own behalf, as well as in the name of the other officers, the cordial vote just carried. It was a pleasure to her to find herself surrounded by such a body of earnest workers. She congratulated them on the increasing success of the Institution during the past year. Referring to the unhappy condition of Ireland, of which country one almost despaired, she thought it remarkable that the industry they were banded together to promote was nearly, if not quite, the only one that had flourished there despite the bad times. It was satisfactory to know that their aims and objects were spreading in that land. She felt inclined to linger on that point, because it seemed to her that the development of Irish industries was a matter of the most important national concern. She was glad to say incidentally that her own and Mr. Burdett-Coutts' efforts in regard to the fisheries on the west coast of Ireland had been attended with the most beneficial results—not only in the direction of making the lives of the fishermen more comfortable, but particularly in the moral elevation of the people. She had noted with interest that Bucks had been the most successful of the County Associations during the past twelve months. She could testify from her own observation to the increased interest taken during the last year or two in different parts of the country in bee-keeping and the production of honey—a result, no doubt, due to the labours of the B.B.K.A., and the Honey Company which they had floated. She did not know whether they had any return, or any means of ascertaining what amount of honey had been sent up to London within any specified period. It would be rather desirable if they could ascertain the amount of honey which had been sold throughout the country during any one year, because it was important to know to what extent the trade was increasing. Many changes had taken place during the year just past, and one in particular, which must come home with great sorrow and regret to all present. They had lost an invaluable friend in Mr. Peel, and one whom every bee-keeper must recall to mind with the greatest gratitude. It would be impossible to overrate the value of the services they had lost by his death.

The Secretary read the results of the election of the Committee for the present year, the following being elected, viz.:—Mr. T. W. Cowan, Hon. and Rev. H. Bligh, Rev. G. Raynor, the Rev. F. S. Sclater, the Rev. Dr. Bartrum, Mr. J. M. Hooker, Mr. D. Stewart, the Rev. F. G. Jenyns, Mr. H. Jonas, Mr. G. Walker, Captain Bush, Captain C. D. Campbell, the Rev. J. L. Seager, Mr. W. H. Dunman, the Rev. F. T. Scott.

Captain Bush, R.N., proposed a vote of thanks to the scrutineer of the voting-paper, which was seconded by Mr. J. M. Hooker, and carried unanimously.

Mr. J. Garratt moved: 'That owing to the abandonment of the annual Show, formerly held by the Association in or near London, it is desirable that the occasion of the Royal Agricultural Society's Annual Show shall be utilised for a more extensive and representative exhibition of bee-keeping appliances and products than has been usually secured.' He said it was a matter that had been mentioned from time to time, and had been brought under their notice before at a meeting of county representatives by a body appearing for the Berks Association. He was sure when they looked back on the annual Shows held in London they would remember a time of very pleasant meetings, which did a great deal of good. Unfortunately the expenses attendant upon them prevented their continuance for a time, but now the finances of the Association were in a more flourishing condition, he would like to see a return to the old custom of holding annual exhibitions. It was three years since they had done so in London. During those three years the occasion of the Royal Agricultural Show had been used to give an exhibition of bee appliances, and he thought that if that occasion was to be the only one on which the Association could have an exhibition, it would be better to make such exhibition far more comprehensive than it had hitherto been. He had been favoured with a schedule of the last show held in London. Comparing that with the rather meagre schedule for the Show of the present year, he felt sure there was plenty of scope for extension in the way indicated. All interested in the subject must desire to see a larger exhibition. To give an illustration—prizes were awarded for similar hives year after year which had apparently reached the last stage of excellence and perfection. The result was that only hives of one particular character were exhibited. There were other hives besides the bar-frame hive, and if cottagers were to be instructed in the use of simple means to make bee-keeping popular and profitable all kinds of hives should be shown in the exhibition. He thought his proposal would involve no more expense than the giving of a few extra prizes.

Mr. Eastty seconded the motion, and said that every hundred visitors who attended an exhibition of the kind in London, thousands would see it if undertaken in connexion with the meetings of the Royal Agricultural Society. It was at one of these shows that he first became interested in the subject. They would be surprised to hear that he had been very successful as a bee-keeper in Bermondsey. His honey was dark-coloured, but nevertheless perfectly genuine.

In reply to the Rev. T. Sissons, Mr. T. W. Cowan said that the resolution could not affect the arrangements for the present year, as the schedule of the Royal Agricultural Society had already been issued.

Mr. T. B. Blow supported the resolution.

The Rev. Dr. Bartrum said that the B. B. K. A., like every other institution, had felt the effects of several years of commercial depression, and he feared the funds at their command would not permit of the extension proposed. Before attempting to carry out the project a guarantee fund of 200*l.* ought to be raised.

A lengthened discussion followed, in which Messrs. Garratt, Sissons, Jenyns, Cowan, Eastty, Raynor, Sclater, Meggy, Dunn, and Seager joined. Two amendments were submitted to the meeting, and negatived on a show of hands, after which the resolution was put by permis-

sion of the original mover and seconder in the following form, and carried unanimously:—'That it is desirable that the occasion of the Royal Agricultural Society's Annual Show shall be utilised, if funds allow, for a more extensive and representative exhibition of bee-keeping appliances and products than has been usually secured.'

The Rev. E. Clay moved, 'That it is desirable that a thoroughly representative exhibition of English bee-keeping should be held during the present year, and that the Committee be empowered to arranged such an exhibition, providing a sufficient guarantee fund is raised for the purpose.' He said the ground he intended to take up had been partially trodden upon by previous speakers. He strongly advocated a bee exhibition in London that year, because it was most necessary to convince the British public that they were able to compete successfully against Canadian produce. There was no doubt that the public interest in bee-culture was on the increase, and the Association should endeavour to profit by this point.

At this point, the Baroness, owing to a prior engagement, was compelled to vacate the chair, which was taken by Mr. Cowan.

Mr. Stewart, in seconding the motion, said that so long as they were enabled to hold exhibitions in the gardens of the Royal Horticultural Society, and show the manipulation of bees in a bee-tent, the venture had been a success; but on the last occasion, when the show was held at the Riding School, Knightsbridge, it resulted in a serious pecuniary loss. There ought to be no difficulty in having such an exhibition as would prove to home consumers that they could produce really good honey cheaper than it could be imported. A guarantee fund might be raised to fortify them in carrying out the project.

The discussion was continued by Messrs. Garratt, Clay, and Seager.

The Chairman said they had every reason to believe that Canada would endeavour to run them close in the production of honey, and it was most important that they should strain every nerve to compete successfully with them, and that it would be most desirable to hold the exhibition in some part of the grounds of the Royal Horticultural Society. It might be possible to do so in the Conservatory, in which case most of the visitors to the Colonial exhibitions would also be visitors to their show. He feared that an exhibition held anywhere outside the grounds would be a disastrous failure like the previous one. To show that a change in public opinion had been wrought on the question of bee-keeping, he need only say that when the Association started it numbered between 200 and 300 members. At the time he was speaking, including county Associations, it counted something like 10,000 bee-keepers in its ranks. He thought it important to teach the British public that pure honey would granulate, on which question there seemed to be a great deal of ignorance.

Mr. Stewart quite agreed with the Chairman's remarks, and thought that if a conversazione were held in connexion with the Show to which the Colonial exhibitors should be invited, additional interest would be evoked in the proceedings.

The Rev. T. Sissons suggested that each of the forty-one County Associations should guarantee 5*l.* towards the expenses, by which means the difficulty about funds would be met.

The Rev. J. L. Seager submitted that the guarantee fund should be personal, and said that if every one present would make an offer of 3*l.* or 4*l.* each the sum required might be raised at that meeting.

A paper was thereupon handed round, on which several gentlemen placed their names, and the amounts they were prepared to guarantee.

The Chairman announced that he had at that moment received a letter from the Baroness Burdett-Coutts promising a donation of 25*l.* towards the expenses of the London Show, and expressing a hope that they would use every effort to make the exhibition a good one.

The subject of the resolution was debated at great length by Messrs. Garratt, Sclater, Hinton, Bush, Meggy, Stewart, Campbell, Clay, Baldwin, Hooker, and Blow, several matters of detail in regard to the exhibition being canvassed. Ultimately the resolution was unanimously adopted, and it was also decided to communicate with the Council of the Royal Horticultural Society for the purpose of obtaining space in their grounds for the proposed exhibition.

The Chairman read a letter addressed to the President by the Royal Society for the Prevention of Cruelty to Animals respecting cruel methods of destroying bees, and the same was referred to the Committee on the motion of the Chairman, seconded by the Rev. Dr. Bartrum.

Dr. Walker moved, 'That the existing rule as to filling up any vacancy which may occur on the Committee during any current year be rescinded, and that such vacancy (if any) be filled up by the remaining members of the Committee from those members who are eligible and willing to serve;' and pointed out several anomalies in the present system of electing the Committee.

Mr. Hinton seconded the motion, on which a general conversation ensued; and the Rev. T. Sissons proposed an amendment, which was carried, and the resolution finally passed in the following modified form:—'That the existing rule as to filling up any vacancy which may occur on the Committee during any current year be rescinded, and that such vacancy (if any) be filled up by the remaining members of the Committee from those members who are willing to serve.'

Mr. Stewart moved, 'That inasmuch as the present qualification for the Committee, viz., subscribers of one pound per annum and life members, is not found to supply a sufficient number of good candidates, the rule be altered as follows:—That the present qualification and mode of election shall continue in respect of the election of ten members of the Committee, and that the persons so elected shall from the general body of the Members add ten names to be submitted to the General Meeting, of whom five shall be elected by such meeting to serve with the ten persons elected as the Committee for the year.'

The Rev. T. Sissons seconded the resolution, and said he strongly deprecated the system by which eligibility to serve on the Committee was obtained by the payment of a certain sum of money.

The discussion was continued by Messrs. Garratt, Campbell, and Walker.

The Rev. F. S. Sclater proposed an amendment to the effect that an annual payment of 10*s.* should qualify a member to serve on the Committee.

The Rev. F. G. Jenyns proposed that the qualification should be reduced to 5*s.*, which amendment was seconded by Mr. Hooker, and carried by eleven votes to six.

The Rev. G. Raynor protested against such a fundamental alteration of a rule of the Association without due notice being given to the members, and considered the step taken to be illegal.

Messrs. Hinton, Sissons, and Stewart, contended that the notice (No. 10) given on the agenda was adequate.

The Rev. F. G. Jenyns felt, after what had fallen from Mr. Raynor, that it would be undesirable to give effect to the amendment just passed, and he therefore moved the previous question.

Mr. Hooker seconded the motion, which was carried with about half-a-dozen dissentients, and the consideration of the whole subject raised by the original resolution was deferred.

The Chairman proposed a vote of thanks to the Baroness for her generosity and increasing interest in the Association, which was carried by acclamation.

A vote of thanks to the Chairman, proposed by the Rev. T. Sissons and seconded by Mr. Garratt, brought the proceedings to a close.

CHESHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

A special general meeting of members of the Association will be held in the 'British Workman,' Ashley Road, Altrincham, on Tuesday next, February 23rd, at half-past seven p.m., for the purpose of considering the advisability of altering the name from the 'County' to a local association.—DAVID MORRISON, *Hon. Sec.*

DERBYSHIRE BEE-KEEPERS' ASSOCIATION.

During the past year the number of members has increased from 207 to 263; and the experts of the Association, Mr. Wm. Handby and Mr. Thos. Austin, have been enabled, through the improved condition of the funds, to visit all the members in the spring, and those who required their assistance in the autumn. The expert for the Northern Division of the County, Mr. Wm. Handby, reports that he commenced his spring visiting in April, and made a few autumn visits in October; that in 17 days he made 96 visits, and examined 158 stocks in bar-frame hives, and 155 stocks in skeps; and that the cost of visiting amounted to 5*l.* 1*s.* 6½*d.* The expert for the Southern Division of the County, Mr. Thos. Austin, reports that he commenced his spring tour in April; that he made 120 visits in 18 days, and examined 466 hives—314 bar-frames and 152 skeps; that in the autumn he made 10 visits in 2 days, and examined 49 hives—26 bar-frames and 23 skeps; and that the cost of visiting amounted to 6*l.* 3*s.* in the spring, and 14*s.* in the autumn. Several lectures on bee-culture have been given in various districts, and practical instructions in the manipulation of bees have been given in the Bee Tent, at Barlow, Creswell, Derby, Matlock Bath, and Tibshelf. The following members have been elected to be District Hon. Secretaries:— Mr. W. Wilkes, for Church Broughton District; Mr. T. M. Bryan, for Clay Cross District; Miss Nodder, for Ashover District; Mr. B. Skermer, for Alfreton District; Mr. S. Hawkins, for Belper District; Mr. T. A. Hoyle, for Staveley District; Rev. C. E. Drew, for Clowne District; and Mr. Henry Cook, for Selston District; while the Rev. G. M. Hubback has resigned his secretaryship for the Ridgway District. By the kind permission of the Derbyshire Agricultural Society, to whom a vote of thanks is due from the members of the Association, the Annual Show was again held on their grounds, on the 9th and 10th of September. The Show was the largest and most satisfactory exhibition which has been held under the auspices of the Association. The judges were Mr. R. R. Godfrey, of Grantham, Mr. Henry Goodall, of Derby, and Mr. C. N. White, of Somersham, one of the experts to the British Bee-keepers' Association.

BEE-CULTURE IN EGYPT.—The Egyptians exhibit great skill in cultivating the bee. The flowers and the harvest are much earlier in Upper Egypt than in lower, and the inhabitants profit by this circumstance in regard to their bees. They collect the hives of different villages on large boats, and every proprietor attaches a particular mark to his hive: when the boat is loaded, the conductors descend the river slowly, stopping at all places where they can find pasturage for the bees. After having thus spent three months on the Nile, the hives are returned to the proprietor, and, after deducting a small sum due to the boatman for having conducted his hives from one end of Egypt to the other, he finds himself on a sudden enriched with a quantity of honey and wax.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* MR. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

WINTERING BEES.

[135.]—In the year 1878 I tried an experiment on wintering bees in two hives so altered as to have the entrances on the top, some particulars of which I send you. The hives stood on four legs, and the floor-board was drawn out between the legs from right to left. The frames were taken out at the back, and a space left behind them to put in the sections. My first swarm came off on 30th May, and was put in, say, No. 1; my second swarm came off 18th June, much larger than the first, and we put it in No. 2 hive. No. 1 hive before the bees were put in, weighed 30 lbs., No. 2 hive, 27 lbs. The season was nearly as bad a one as I ever experienced, but I did not feed them. On 21st September No. 1 weighed, gross, 44 lbs.—hive 30 lbs., bees, &c., 14 lbs.; No. 2 weighed, gross, 43 lbs.—hive 25 lbs., bees, &c., 18 lbs. I did not feed them, but left them as they were. Weighed again in February, No. 1, 37 lbs., No. 2, 36 lbs., each of them were 7 lbs. less than in September, which had sustained them, being ½ lb. weekly. Now the 1878–'79 winter was a regular old-fashioned one; there was scarcely an opportunity from November till February for the bees to take a flight, snow on the ground continuously, excepting a few days end of December. I took out the floor-boards in February, and found about 100 dead bees, but no dirt.—G. F. PERKINS.

HAVE BEES A LANGUAGE?

[136.]—We all know the answer given by the late Mr. Pettigrew to this question. But then he almost deified the bee. Still I really believe that it was his book and and those fascinating letters of his to the *Journal of Horticulture*, which clenched the nail and riveted the bee firmly on my mind.

I have always been of opinion that bees have a power of communicating their ideas to one another, *i.e.*, those ideas necessary for their preservation, as for instance, when they are attacked; when there are stores to be obtained; when they have decided upon the moment for swarming; the loss of their queen; and so on, but I am certain of this, that they have have no direct means of making instantly known their ideas one to another as we have, for if so, how comes it that it takes a colony of bees from three to six hours, and in some cases twelve to eighteen hours, before they discover the loss of their queen? Bees have the power of communicatiug this fact to each other, we well know, but the process—whatever it may be—is a comparatively slow one. It may be that influences, or states, of this kind, act like a disease, and spreads itself little by little over the entire mass.

Now let us look at the subject of honey-gathering. How comes it about that the whole hive, or at any rate all the old bees, all of a sudden start off for the fields at apparently a given signal, on foraging excursions? How comes it that the hive, which a few minutes before was as quiet as the night, is now reverberating with the roar of a thousand wings? What could have caused

all this commotion? Let us see. One, or perhaps more, of the bees whose duty it is to keep a watch for honey and weather, have returned with their honey sacs filled, and pollen 'baskets' burdened, and with the warmth of the sun still aglow in their little frames. They enter, and are met by hundreds of others, who stop them at every turn, and thoroughly inspect them; they offer their proboscides to all around, who all take an infinitesimal portion of the nectar, and they likewise pass it on to others till, in a minute or so, the whole colony is alive to the fact that there is honey to be obtained. But here comes another difficulty, where is to be obtained from? I contend that the bee or bees, who in the first instance brought honey or pollen into the hive, and therefore the cause of imparting the knowledge that something was to be got, have no power to inform their sisters *where* they obtained it; and so what do they all do? Why, all sally forth in search of it, and by means of those powers which Nature has richly endowed the bees with, most of them soon find out Nature's Insect Larder. To my own mind, this solution of the difficulty is the only one which will account for the fact that so many of the bees return without even obtaining any treasure at all.—A. E. Booker Hill, *King's Lynn.*

SOUTH CORNWALL AND HIS DIFFICULTIES.

[137.] My cousin 'South Cornwall' (all Cornishmen are cousins) seems full of troubles, they seem on the increase; and like a brave man in despair he strikes out right and left, now at the bees, now at his honey, at the Editor, then the Associations (only it was Christmas), statesmen, Free Trade, Greater Britain, the people that offer the market women a 'lift' and give her a 'jolting' gratuitous, and, last of all, at Mr. Neighbour's dodge for 'ripening' honey.

I admit it is very sad to produce any article and then not find a sale for it. I met another 'cousin' in our market town recently. She had come into these parts with her husband, who had taken a farm near at hand; she had her basket of butter as at home, she was looking decidedly 'blue,' there were no stalls in the market for butter, and apparently no one that ate butter in the neighbourhood. I helped her with what advice I could: 'Cold comfort,' say you, 'it costs nothing.' The results in detail I need not give. Six weeks after I saw her again. 'Where is your basket of butter?' 'No trouble to sell it now,' says she; 'they come to the farm and fetch it;' we wish we had brought thirty cows instead of eleven—this was over three hundred miles from home.

I have given you this because it illustrates honey selling; I could not sell mine once, but now it is all 'fetched,' I have no need to go a-begging with it; some of it fetches fancy prizes too, but I always put it up tastily. 'But you are only one.' Quite so, but I have a near neighbour, he removed here from about fourteen miles distant and brought twenty-five stocks of bees with him. He came to me for help, I sold some for him at a small commission, and I gave him a 'wrinkle' as well. He acted on it and went to a large grocer in the town and arranged with him to put a stock on his counter and keep it up to that amount, taking all risks, but giving the grocer a commission on all sales, and a monthly account. He staged the goods very tastily, they sold well, and the demand has increased by leaps and bounds. This year he was cleared out of six cwt. of section honey before Christmas, and the stock was exhausted, *and the grocer was in trouble because he must keep it in stock; it had become a necessity.* I was again appealed to. I at once applied to a 'poor' fellow, who, as I expected, had a large stock by him that he could not sell. I told him what I wanted, and I found if my friend would pay carriage, glaze them, and put them up as he did his own, taking all risks and pay cash, my 'poor' friend was willing to submit to be bled to the tune of ten per cent. I need not say I turned from him with disgust. I do not mind working hard for the good of my neighbour gratuitously. You, Mr. Editor, know something of that, but if it is to be a business transaction I look for something like business terms. Don't think depression does not reach to that happy county wherein 'A. E.' now dwells; it does, and very aggravated; but still we have sufficient 'rose' in our vision to keep alive 'the eternal spring of hope.' 'But hope that is seen,' &c., &c.

Just a word, in closing, to Mr. Wood ('County Associations,' 123). The work he points out cannot possibly be done by them: it is a matter of supply and demand simply, and must be done by trades. You cannot expect any committee of a semi-philanthropic organization, as Bee-keepers' Associations are, to engage in and successfully carry out trading operations as dealing in honey involves.

'South Cornwall' has a further trouble in store. If he will read the rules for the guidance of secretaries organizing shows, as agreed on at our meeting of representatives at the B. B. K. A.'s last quarterly meeting, I fear in his present state of mind he will not derive much comfort from their perusal, and yet they were considered a necessity by all there assembled, including—Amateur Expert.

THE PORTABLE HIVE.

[138.] This hive is a facsimile of 'Abbott's Copyable or Improved Irish Hive,' except that it is so arranged as to take to pieces. This hive is so well known to the public for its simplicity of construction, cheapness, &c., that it will be unnecessary for me to dilate on it here. The advantages gained by the Portable hive are several. Amongst them are:—1. People shifting their quarters can, without much expense, take their hives with them (the most expensive part of their apiary). 2. In case of foul brood, &c., the hives can, in the course of a few minutes, be so thoroughly cleaned and brought into a thoroughly sanitary condition, every corner and crevice being get-atable. 3. Persons (especially those of a non-mechanical turn of mind) wishing to take hives to our colonies or elsewhere. 4. The enormous weather-resisting powers and strength making it suitable for any climate. Therefore, with one's hives taking to pieces, likewise the frames and the section-racks unscrewing, what before were so cumbersome in transit will now occupy one-fourth or one-sixth the space they did before. —Jenkins Kinnaird, *Leatherhead.*

[Our correspondent has forwarded a very neatly made model of his Portable Hive. If our memory serve us right, Messrs. Abbott have intimated their willingness to forward hives in pieces; and it is not an infrequent practice of the American manufacturers of the Langstroth and Quinby hives.—Ed.]

REMARKS FROM AN AMATEUR'S DIARY FOR 1885.

[139.] Having been very successful last year, and noticing the numerous inquiries made in the *Journal* as to manipulations and time of performing the same, I believe the following remarks will be found of practical use to many who, like myself, have been induced to commence bee-keeping by reading the *Bee Journal.*

In autumn 1884, I put four stocks in bar-frame hives, into winter quarters, on seven, eight, six, and eight frames respectively. Nos. 1 and 2 were old stocks—swarms of 1883—when, and with which, I commenced bee-keeping. No. 3 was a June (1884) swarm, and No. 4 was a stray swarm found in a hedge on July 26th, 1884. January 1885, was cold and dull, the sun shining on five days and bees flying on seven days. Tom-tits were busy about the hives at the end of the month.

February was favourable, the sun shining on twelve days, and the bees out on twenty days. From the 1st

to the 15th, yellow excreta were abundant on the hives and surrounding bushes. I consequently dried and warmed the chaff cushions, which speedily checked what seemed to be indications of dysentery. On the 11th the bees were working on the snowdrops, being two days earlier than last year. On the 28th, at noon, with bright sunshine and the thermometer at 58°, I overhauled the stocks, and found brood on the three central frames. Removed the frames to the front of the hives, crowding the bees on to five, five, four, and five frames respectively. The crocus blossoms began to open at the end of the month.

March was a very cold month, the bees flying on nineteen days. Upon examining the hives on the 28th, and spreading the brood, I found less brood than at the end of February. During the month the stocks were fed slowly with dissolved cakes of candy, left over from the winter.

April, from the 1st to the 17th, was cold and unfavourable for bees. On the 6th, with thermometer at 60°, examined hives, and spread brood by placing back frame in centre and adding one frame each to Nos. 3 and 4—found abundance of brood, but little food. From the 17th to the 30th was splendid, the bees daily working on the blooms of gooseberries, damsons, pears, and the buttercup. On the 20th, I popped a frame in the centre of Nos. 1, 2, and 4; spread brood in No. 3, and found queen-cells started in No. 2. On the 27th, spread brood and popped fresh frame of comb into Nos. 1, 2 and 3—drone brood in No. 2. Total frames in hives: seven, seven, six, and seven, respectively. Fed slowly during the month.

May was cold and unfavourable up to the 24th. Cherries and currants began to bloom at the beginning of the month; apples and forget-me-not, at the middle: and chestnuts, ivy and holly, towards the end. On the 5th, added one frame to every hive, and found drone-brood in worker-cells in all the hives. Cut out queen-cells in No. 2. On the 19th drones were flying; added a frame of foundation to Nos. 1 and 2. On the 24th removed two frames from No. 1 to No. 2, and placed super of eighteen sections (1-lb.) on top; the number of frames below being eight. In No. 3, removed one frame to No. 4, and placed super of eighteen sections (1-lb.) on top; the number of frames below being seven—also placed frame of foundation in No. 4. On the 29th, doubled No. 2 by removing six frames of old comb from the brood-chamber to a hive on the top of the other, and replacing with two frames of foundation, thus leaving eight frames in the lower hive. On the 30th, added two frames of foundation to No. 4, and to-day a neighbour had a swarm out of a skep, being the first in this neighbourhood.

June.—The first fortnight was splendid honey weather. From the 15th to the 25th was dull, cold, and showery, with very little honey coming in. From the 26th to the end of the month was good honey weather. The flowers open this month were sycamore, may, ivy, strawberries, forget-me-not, raspberries, and white clover. I should encroach too much on your space to chronicle all that was done this month; but to summarise. No. 3 swarmed on the 11th, which I temporarily hived into No. 5, and supered. No. 4 swarmed on the 11th, 12th, and 27th, and were returned every time. By the 30th I had taken ten sections, and extracted twenty-eight pounds.

July.—The first fortnight was splendid honey weather. From the 15th to the 22nd was not so good, being dull and cloudy; the rest of the month was splendid. The flowers open were white clover, and towards the middle of the month the limes opened. A large acacia, in bloom at the beginning of the month, was crowded with bees all day long. No. 4 swarmed again on the 1st, and this was also returned. No. 5 swarmed on the 12th, and was given to a friend. This month's yield brought the total to 110 sections and ninety-six pounds extracted.

August.—The honey season being over, on the 8th I united Nos. 3 and 5; and on the 10th removed my last super; the total yield for the season being as under:—

	Sections.	Extracted.
No. 1	80	15
„ 2	—	82
„ 3	25	6
„ 4	—	76
„ 5	16	6
Total.....	121	185

September.—At the end of the month the bees were removed into clean hives, and the number of frames reduced. September was on the whole favourable; but a sharp frost on the 28th cut most of the summer plants. Winter passages were cut at the end of the month, and the number of frames reduced to seven, seven, nine, eight, in the respective hives.

October was a cold, wet month, the bees being indoors most of the time. On the 16th I placed a 3½ lb. slab of candy under the quilt of every hive.

November was dull and cold; but the bees were able to fly on eight days.

December was also cold, the bees flying on two days only.

The honey extracted in July and August was very light, but had a greenish tint. The wax extracted was very dark, with a greenish hue.—GWENYN.

THE BEST HIVE.

[140.] I was very pleased to read Mr. A. Sharp's letter on the above subject, and am gratified to find that others think as I do that the long hive is the right one. I came to that conclusion last year, after having tried many ways, and told some of my friends never to make another hive unless they would take in from eighteen to twenty bars. The doubling system has, I think, many objections, one great one I found to be the large extra amount of room given all at once, beside the expense of the sheet of excluder zinc, which must be placed over the lower hive. I have found that always required, or the queen will get up into the top hive, it may be on account of warmth.

Now, on the subject of hives. I am at a loss to know why so many go to the expense and trouble in making double-walled hives (I am speaking of those who make their own hives and not for sale), for I have found that my bees have always done just as well in single walls, and in future I intend to make all single. I do not believe that bees are hurt much by cold if kept dry; the one thing I always fear is the heat of summer, but with care that can be got over. This winter we must call a cold one, and I may mention a fact in my apiary that in two boxes with one-inch walls and ¾ tops high enough to take sections, I have had no extra covering but a piece of calico, and the bees are well and strong with plenty of food. I tried this as an experiment, but as the cost is so little to place something over them, I would not like to advise on the matter. These hives seem to me to be much dryer than those I have covered with thicker material. I should like to hear what others think on the subject.—H. F. HILLS, *Earls Colne, Essex.*

SMOKING BEES.

[141.] Having read in the *B. B. J.* of the 4th inst. Mr. Green's paper on the 'Climax Hive,' advocating the system of non-smoking in handling bees, I venture to send the following notes from a lady's management of bees in the county of Surrey during the past spring, which may, I trust, invite others to give their experience.

'*May 10th*, 1885.—I am quite *freely* manipulating bees in the body hive now without *any* smoking. In fact smoking takes too much time. I am only particular to wear always a veil for the bees' sake, that they might

not be entangled in my hair and unnecessarily irritated thereby, as also gloves covering my sleeves that the bees may not tease *me* by crawling up the arms. Out of eight hives shifted about one day for introduction of fresh frames only one was spiteful, and I had almost to fly the cottage, where I was fastening old combs into new frames. I then prepared the smoker and used it, after which all went well. This hive was the worst-tempered hive also last season.' This shows a very different effect to that described by Mr. Green and his 'savage hive.'

'*May 13th.*—Two days ago I manipulated seven hives and only smoked two of them. Yesterday, again, eight hives and smoked only one. This morning three hives and no smoker even lighted.'—F. H., *Kent.*

SMOKING HIVES.

[142.]—I have read with much interest Mr. W. S. Green's paper on the above subject, and with your permission will give my experience. And, first, I am an amateur, and never had bees until last August, when I got a skep, the bees and combs I transferred into a bar-frame, as per 'Cowan,' with the exception it was done in the morning. After a few days I went to *try* and put in a new queen (and trying it was). I marched up to the hive with every expectation of success. Alas! soon to be dispelled—behold me flying before an infuriated army of bees, who are not content until I go into the house, and it was hours before I could get the smoke; the queen was lost, so I had to get another. This time I did better, but the *smoker* was conspicuous by its absence. From that time I have never used a smoker, and do not intend. I do not use gloves, as I have found them in my way.—R. J. S., *Cavan.*

ENEMIES OF BEES.

[143.]—Whilst we are on the subject of death's-head hawk moth, tomtits, &c., as enemies to the honey bee, it may not be out of place to give an account of a case coming before me on my autumn tour. The apiary in question consists of some six or eight hives (Abbott Bros.); quite lately these hives have been attacked by a bird, or birds, which have made holes in the roofs and sides, the latter by standing on the porch. One hive has as many as six holes in various stages of completion. The holes are about $1\frac{1}{2} \times \frac{1}{4}$, and taper to about $\frac{1}{4}$ square at the base. The hives are $\frac{3}{4}$ in. wood, and perfectly sound. It was certainly disheartening to see the wet state of the interior when the roof was taken off. Have any other bee-keepers met with like experience?—C. W. Summerskill, *Expert Warwickshire Bee-keepers' Association, Hartlebury.*

Review.

A Book about Bees. *Their History, Habits, and Instincts; together with the First Principles of Modern Bee-keeping for Young Readers.* By Rev. F. G. Jenyns, Rector of Knebworth. (London: Wells Gardner, Darton, & Co., 1886.)—This work of Mr. Jenyns will prove a valuable and a welcome addition to bee literature. The object of the book is to make the study of the honey-bee interesting to young readers. It does not aim, on the one hand, to be a guide-book to the management of bees, or, on the other, it does not affect to partake of the nature of a scientific treatise. Its design is more lowly. It desires to occupy an open field which hitherto has not been occupied by any previous treatise. It impresses on the youthful mind the importance of the habits of observation, and seeks to unfold one page in the great book of Nature. Mr. Jenyns, we consider, has succeeded in the object he has set before himself. He has a special aptitude for making his subject thoroughly intelligible to his young readers. His style is lucid and simple; and from the beginning to the end the interest in the subject is well sustained. It is written with much painstaking and with great conscientiousness. It will, besides effecting the purpose for which it was primarily compiled, create a desire to study matters which are cognate and collateral to the subject treated by the author. The study of the bee can be readily grafted on many other branches of knowledge, while many other branches can be grafted on it. This is very apparent in the work before us. Its revelations and its teachings will create a desire to know more of entomology, and to penetrate the mysteries of botany. It inculcates lessons of kindness to all living creatures, and it teaches the value of habits of order, cleanliness, and thrift. The book will win the support of ministers and teachers, and we should be pleased if it has a foremost place among the prizes given to the young. Lecturers on bee-keeping will find in its pages a repertory of illustrations and anecdotes which will greatly assist them in their labours. Parents are frequently disturbed by the nature of the books read so greedily by their children in their spare time. They have an almost unlimited supply of exciting tales which unfit them for more requisite studies. It is to be desired that children should be delivered from this unnatural tension of mind, and be brought more in contact with the sobrieties of daily life. Natural history should be taken up as one of their studies, and Mr. Jenyns' work is well calculated to produce a salutary effect on their minds, and allure them to take an interest in the special subject it so well illustrates. The work is introduced to the reader by a carefully-written preface by the Baroness Burdett-Coutts. It has been written at the request, and published with the sanction, of the B. B. K. A., with the hope that it may be accepted as a reading-book in schools. It is abundantly illustrated by many engravings, some of them of a very superior order. We wish the work all success, and heartily recommend it to bee-keepers as a model of conveying instruction to the young on the habits and structure of the honey-bee.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[54.] *Moving Hives.*—The safety of moving your hives much depends upon the weather in your locality; if very severe, and the bees have not been able to fly much, I should say move them.—J. S. Lawton.

[72.] *Excluder Zinc under Sections.*—(T. Jenkinson.) In working two hives with crates of sections on top, I found that in one case where I had no excluder zinc, but where the crate rested on metal ends raised above the frames so that the space between frames and sections was about $\frac{3}{8}$ in., I lost several sections with drone-brood. In the other, where the space between frames and sections was only $\frac{1}{4}$ in., there was not a single case of brood in the sections, although I did not use excluder zinc in this either.—Boz.

[126.] *Substitute for Smoker.* (Irish Novice.)—I used a piece of indiarubber tubing, as illustrated in Cheshire's *Practical Bee-keeping*, when smokers were more costly, but do not recommend it. A tobacco pipe is the most simple and effectual of all smokers, but you cannot wear a veil with comfort, and a pipe becomes both fatiguing and injurious if you have prolonged manipulations.—Amateur Expert.

[126.] *Cheap Smoker.* (Irish Novice.)—There is a cheap little smoker made by W. P. Meadows, Syston, near Leicester, which is blown by the mouth, and any one with a good natural pair of bellows will find it act admirably. —Prata.

[126.] *A cheap Smoker.*—A poor Irish cottager can make a very good smoker with a ½-lb. coffee tin by inserting a short piece of the elder, with pith out through the lid and bottom, and blowing through with the mouth; if a piece of wood ½-inch thick is nailed to the bottom and the lid, boring a hole for inserting the elder tube, a permanent, strong smoker can be made that will last for years.—J. E. Grocott.

[127.] *Manipulating House.* (Irish Novice.)—The bees would fly up to the glass and waste their energies in endeavouring to get out; a small portion of them would get through the chinks, but very few, as the bulk fly to the strongest light; it is a most unsuitable place. By darkening the glass roof with boards or curtains outside, and opening the doors, the bees would fly out and join their companions, if hive is placed on original stand; very few would find their way back into the hive if same was left in the building. Presuming that you manipulated a hive in the house as it is, the flying bees would, when quite exhausted, gather in clusters on the sashes; they could then be—towards evening—collected and placed in entrance to front of hive, but this is a most cruel and unwarrantable proceeding.—W. B. Webster.

[127.] *Manipulating House.* (Irish Novice.)—Notwithstanding what you say about being compelled to leave home, &c., I advise, do not manipulate in weather that requires an artificially warmed house. You may use it as you suggest; you would find the bees that took to the wing while the hive was open would fly to the glass and there worry themselves to death; those few that did effect an escape from the house would return to the stand, except the young bees who were then flying for the first time; these would hover around the house attempting to return, and would consequently perish.—Amateur Expert.

[128.] *Narrow Sections.* (John J. Smyth.)—Sections of such a size are filled quicker; they are generally used without separators. Cut down some two-inch sections to the width you require.—W. B. Webster.

[128.] (J. J. Smyth.)—They would take longer, 'weight for weight,' than 2 in.—Amateur Expert.

[129.] *Doubling.* (M. Ormond.)—No; you will only be wasting your bees, except in the case of motherless or depopulated stocks, when unite. Advertise those you do not wish to keep in the *B. B. Journal.*—W. B. Webster.

[129.] *Doubling.* (M. Ormond.)—The probability is with proper management it would increase your harvest 200 per cent. Do it the first really fine spell of weather in March. —Amateur Expert.

[130.] *Queen Raising.* (Walter Campbell.)—If there are no bees kept within half a mile of your house, which at Tottenham is very unlikely, you might stand a chance of getting the unimpregnated mother bee fertilised by selected drone. Even at that distance the chances are that she will mate with just the drone you least desire. Consanguinity among bees is of not so much importance as with the higher order of animals, although it must be taken notice of to some extent. Your idea that fertilisation must take place with a drone of the same hive, that is, with a brother, is a mistake; it as frequently takes place with a drone of some other hive, which in queen-rearing we often find out to our disgust. You would find it an extremely difficult job to catch all the drones in the two hives, and then introduce a few strangers. You could form a nucleus, into which place a queen-cell, and remove same to a distance of a mile from any other hives, and place the hives having the selected drones near. See that there are no drones in the nucleus.—W. B. Webster.

[130.] *Queen Rearing.* (W. Campbell.)—Divide them, not when the hive is full of brood merely, but when it is full of bees as well, and leave the fecundation of the queen to mother Nature, she will take care of that.—Amateur Expert.

[131.] *Chilled Bees.* (F. L.)—The time varies according to the degree of cold that they are exposed to. A temperature below 32° Fahrenheit would kill them in twelve hours, but in higher temperature I have revived them by warmth after forty-eight hours of suspended animation.—W. B. Webster. [Some bees were forwarded to us from a distant part of Devonshire, with an inquiry as to the cause of their death, and on their arrival we found them alive and stinging.—Ed.]

[131.] *Chilled Bees.*—(F. L.)—Much depends on the weather. From a few minutes to some hours; but frequently bees that have been restored by artificial warmth again succumb on exposure to the cold air and never even reach their hives alive.—Amateur Expert.

[132.] *Distance between Frames and Hive-floor.* (F. L.)—⅜ inch is a very good distance, but even with $\frac{5}{16}$ I have never found the bees to build comb underneath the frames; they will do so in such a space at any other part of hive.—W. B. Webster.

[132.] *Distance between Frames and Hive Floor.* (F. L.) —Never exceed three-eighths, five-sixteenths is ample, half —or as you say four-eighths—is too much and the bees will build comb in the space. This is the great objection to some kinds of metal ends; if you are making new hives you can allow for it, but it is awkward when first introducing them, we found it so.—Amateur Expert.

[134.] *Judging.* (Louth.)—Healthiness, strength of colony, correct and regular markings of workers, size, condition, and correct marking of mother bee, regularity of brood nest, regular building and cleanliness of combs, and, lastly, the 'get up' of the hive.—W. B. Webster.

[134.] *Judging Black and Foreign Bees.* (Louth.)—Declined with thanks. I want to keep a whole skin for a short time longer.—Amateur Expert.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[144.] *Preventing Casts.*—As I am away from home all day and could only get home occasionally for an hour or so, I purpose driving an artificial swarm of bees from my hive (a straw skep). Can you kindly tell me how to prevent the bees from sending off casts that would be likely to issue during the twenty-one days that should elapse before transferring stock to wooden frame hive, which I purpose doing when the brood is all hatched? Also, what is the easiest and best method of fixing foundation in $4\frac{1}{4} \times 4\frac{1}{4}$ sections which have no groove or saw-cut?—Milson.

[145.] *Dead Brood.*—In overhauling a hive the other day I discovered that two frames were more or less filled with unhatched brood of last year. May I ask if this necessarily means foul brood. The cells are capped over and not indented. What had I better do?—W. H. H.

[146.] *House for Extracting Honey, &c.*—I have a bee-house in my garden partly occupied with bees, and the remainder of my hives are close to it; as it would facilitate my work and be a great convenience to me, I should like to partition off this house and use it for extracting honey, transferring skep, combs, &c., but the information I wish to obtain is whether being so near the hives the bees would be disturbed by the smell of the honey and thus cause fighting and robbing. The house is built of wood with corrugated iron roof. I suppose it would be difficult to make it bee-proof.—A. Snook.

[147.] *A Query.*—Why is it that when one takes a bee or a wasp between thumb and forefinger by its legs it never stings? Our peasantry, ever superstitiously inclined, say that it is because during mass the sacred wafer is thus held up to view (between thumb and forefinger.)—J. C. Andrew, *Port Mahon, Minorca.*

[148.] *Bell Glass.*—Could I work successfully a bell glass super on a frame-hive without excluder-zinc, or would queen enter super and spoil it for exhibition?—Albion.

[149.] *Tinned Wire.*—Would you please tell me where I can buy fine tinned wire same as used in wired foundation?

and if I were to lace a frame with it (say every 2 inches) and then to press in a starter of foundation of about 2 inches deep, would the bees build the comb as usual, or would they refuse to work, or build crooked combs? I want to make the combs stronger for extracting, but cannot afford wired foundation.—ALBION.

[150.] *A Beginner's Desiderata.*—1. What kind of bees and hive would you recommend for the district of Blackburn? 2. What would be the appliances really necessary to commence with? 3. What would be the probable cost of all required, and the best time for purchasing? 4. The names of any bee-keepers in this district who would give me information and instruction should I find myself able to commence?—JAMES HODGKINSON.

[151.] *Bee-houses.*—I intend putting up a bee-house this spring, and shall feel much obliged to any of the readers of your *Journal* who can give me particulars of such a building? I wish it to be of wood and about 10 feet square. I should also be glad of the experience of bee-keepers with such a house as to its advantages or disadvantages?—EDWD. J. GIBBINS.

[152.] *Moving Hives.*—I have to move half-a-dozen large Combination hives three miles between now and March 25th. Will it do to simply close the entrances with perforated zinc and put them on a spring wagon, or must I remove quilts, &c., as in summer moving? It seems to me no danger of suffocation would arise as the bees are now not crowded. Had I better move them at once or wait a month? In the former case I cannot look after them.—E. J. G.

Echoes from the Hives.

Norwich.—I am wintering twelve colonies on aphidean honey and am feeling a little anxious about their fate, as it is said that this sort of honey causes dysentery, as yet I see little or no symptoms of this disease.—HY. DOBBIE.

North Cornwall Apiary.—I send a few notes from my diary, thinking it may interest some of your readers to know what is doing in this part of the world. Jan. 11 was the first fine day of the year, very mild, and the sun bright and warm. I examined my stocks, and found all, except one, in good condition, and well provided with food; Jan. 14 also a fine day, but the rest of the month was quite wintry, with deep snow on the ground. The present month has been more favourable. Feb. 4, 10, and 12, were beautifully bright days, the bees rejoicing in good flights. Feb. 14 was better still, quite a spring day, wonderfully mild and the sun hot; the bees came out in great numbers, and were busy cleaning out every corner of their hives, and gathering from the crocus and arabis. This is the *first* day they have carried pollen this year. From Feb. 14 to 20 the weather was bitterly cold, sky cloudy, with a strong east wind blowing, when it again cleared off and became bright and frosty, the bees being able to take exercise freely in the middle of the day. It may be well to add that I visited a neighbour's apiary on Feb. 10, and I found it in good condition, over two-thirds of his stocks being strong and healthy.—THE MANAGER, *Rowe-Bodmin, February 22nd.*

Hunts, Somersham, Feb. 22nd.—This has been the most severe winter experienced for several years, and an opportunity has been given of fairly testing the various systems of wintering. The candy-alone method, I should imagine, has almost received its death-blow. I am satisfied that bees cannot exist on such food during a long and severe winter. I promised in my 'Echo' last December to say how and with what result I wintered several lots of bees, which I was unexpectedly asked to drive on November 7th, when I had nothing but empty combs on which to place them. Here is the result. All were well and closely packed on empty combs with cakes of candy on the tops of the frames. Some I left thus, and not one lot has survived; the others received, in addition, syrup in small quantities as the weather permitted, and at present they are doing well. Like 'N. H.' I tried wintering in *nuclei*. Several lots of Ligurians I left in three-frame *nuclei* with single side-walls, but I regret to say I have lost every one. Three died in the midst of plenty! A nice lot of honey, but all candied, being around them. In the others the consumption of food had been so rapid that, though well supplied with sealed food (mainly syrup) in September, when examined during the first week in January they had consumed all but a little candied next to the outer walls. All my other stocks, with slight exceptions, are in good trim and breeding fast. A few weeks since I was in a neighbouring district, where I was informed that stocks were being lost in great numbers. From inquiries I made I believe the losses were due to scarcity of food, which, owing to the dry weather last summer, was scarce in nearly all late swarms and casts. This morning the sun is shining delightfully and the bees are enjoying a flight after being closely imprisoned for more than a week by dull, cold, and damp weather. A gentleman called last week to tell me that the bees, in an apiary I have established in the next village, *being without food* (?) have robbed the stocks in a neighbouring apiary and killed their queens. I am inclined to attribute the complaint to jealousy and the loss of stocks to starvation. However, being in enforced idleness, through an epidemic, I intend, while visiting neighbouring bee-keepers and members of Hunts B. K. A., to inspect the scene of slaughter.—C. N. WHITE, *Hon. Sec., Hunts B. K. A.*

Dunmury, Ireland, Feb. 22nd.—Frost at night and cold bright days has been the rule here this last ten or twelve days, and the bees only fly between twelve o'clock noon and 2 p.m. Weather a little milder to day and like rain.—J. N. C.

NOTICES TO CORRESPONDENTS & INQUIRERS.

G. G.—*Vignole's System of Swarming.*—If your hives are constructed like skeps, the only way to find out if they are in a fit state for swarming on the Vignole system, is to lift them off the floor-board, turn them up and by blowing in a few puffs of smoke to disperse the bees; some idea of the condition of the hives may thus be obtained. If they are full of bees with brood down to the bottom edge of the combs, they would be ready for swarming.

F. C. ANDREW.—*Doubling and Removing Upper Storeys.*—At the end of honey season the upper storey can be removed, and when the combs have been extracted, remove the next storey and put the one with the empty comb in its place, and continue in the same way with the others until all the honey is taken. Then, as the bees decrease in numbers, the upper storeys can be removed. You need not wait for the combs to be filled to put on second storey, but do it as soon as the bees feel the want of more room. On this system the hives are not divided, but more room given as the colony increases.

WEST MIDLAND.—*Doubling.*—Doubling is performed by selecting two very strong hives, removing all the bees from one of the hives and placing it, containing only the frames of comb and brood as a super, on to the top of the other hive. Nothing is placed between the two hives, and the bees finding comb containing brood above them soon ascend, and by the brood hatching above and below, the hive is soon very much strengthened and is enabled to spare a large number of bees for work. The bees which have been removed from the hive are treated as a swarm, put on a foundation or given empty combs, and at once supered. If you wish to leave your honey in the hive to ripen,

you may find it advantageous to put on a third storey as a super.

Lieut.-General Barnard.—*Feeding with Sections.*—If the sections are not granulated they may be given as food to the bees at the top of the hives or skeps in float-feeders, the floats being removed and the comb being cut into cubes of an inch. If granulated, melt the section honey at about 190° Fahr. and when cool the wax will be set on the surface. The honey may then be brought to the consistency of syrup, by mixing with hot water, and given to the bees.

N. E. R.—Bees never do well in a greenhouse. Flying to the light and being unable to escape, they beat themselves to death upon the glass. We should prefer placing the hive outside the house, and occasionally opening the door and the lights for the bees to enter and to escape, at such times as they are in full work.

John P. Smyth.—*Foul-brood.*—Yes, we advise you to feed with phenolated syrup according to Mr. Cheshire's recipe, say for a fortnight. The bees take it readily, and it will prevent the disease spreading should any germs remain. We fear the neglected skeps of cottagers often contain and spread the disease unknown to their owners, and neighbours, although it is so easily discovered.

High Peak.—*Dysentery.*—The symptoms you name are those of dysentery, but there are various degrees of malignancy. It is quite possible that the length of confinement may have caused the defilement of the alighting-boards while the hives may be clean within. Examine on the first fine day and refer back to 'Useful Hints' for treatment.

Constant Reader.—1. *Feeding.*—For spring and autumn feeding we prefer syrup. Duncan's granulated sugar is the best for syrup. 2. *Transferring.*—No, the queen would not descend. We advise you to transfer. If you wish to increase the number of colonies allow the skeps to swarm, and twenty-one days afterwards transfer combs and bees from the skeps to frame-hive. This is the best plan, and will prove least troublesome in the end.

W. Williams.—*Queen taking Flight.*—We think it most probable that the queen did re-enter the hive. Do not attempt to ascertain her presence or absence yet. If absent, you could do nothing now to remedy it. In six weeks' time there should be brood existing, which you can see at a glance, if she is present. If, then, you fail to find either her or brood, you may know she is lost, and had better unite the bees to another stock.

A. S. Hughes.—*Syrup with Vinous smell.* The smell of the sample seems to be derived from the bottles. If there is a muddiness, or sediment, or a crust on the surface, there has been fermentation, and the syrup must be boiled before giving it to the bees. Your bees survived their journey more by good luck favoured by cold weather than good management.

R. L. Richardson.—*Bees suffering from Dysentery.*—While the weather remains so cold you can only look to the dryness of the hive, exchange the quilts for warm dry ones, and place under them on the frames a cake of candy containing phenol. You can get it from Mr. Saddler, High Street, Forfar.

M.—*Hive-making.*—You will find an answer to your questions in the last part of the paper in question.

J. Lander.—The portion of foul-brood comb has been forwarded to Mr. Cheshire for examination.

Lasswade.—The appearance of the bees indicates that they died of starvation. It is quite possible that the back frames may have been full of honey; but if the cluster of bees were at a distance, and there was an absence of winter passages, the supply of honey would have been of no avail.

A. K. B.—The granulated honey, which is of excellent quality, can be utilised for spring feeding. For mode of giving it, please refer to reply to 'Lt.-gen. Barnard.'

Fight between a Bee and a Earwig.—A few Sundays ago I was walking by one of my hives when I noticed that on the floor-board a tremendous fight was going on between a bee and a large earwig. The bee was apparently trying all she could to drive the earwig off the floor-board, but he evidently desired to remain there, and admonished the bee by squeezing her with his pineers. Upon this the bee waxed wroth, biting the earwig and rushing round him till at last the earwig seemed to lose his temper entirely, and pinched her very hard in the tail; the bee finding herself thus held fast, and doubtless remembering the old motto 'Death or Victory,' made a loud cry, or rather buzz, and stung him with all her strength between his pineers. They then both began a tug of war, the earwig pulling one way and the bee firm in her purpose endeavouring to pull him off the alighting-board. This was most exciting, neither seeming able to draw the other along, but was stopped through other bees in the hive coming to the rescue of their mate. These caught hold of the enemy, and at last the bee got free, leaving her sting behind. It being very cold the bees went indoors again. I secured the earwig, who died very shortly, his last efforts were convulsive, and I presume it was a case of death from poison. I shall be pleased to send the earwig, with sting, as left by the bee, to any one who collects curiosities of this kind.—W. Zachary, *Cirencester.*

Our next Number will contain the first of a series of papers by Mr. T. B. BLOW, of Welwyn, Herts, entitled, 'Among the Queen-raisers in the North of Italy,' which will be illustrated by Numerous Engravings.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

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Editorial, Notices, &c.

GREAT NATIONAL APIARIAN EXHIBITION, 1886.

The great advantage to the cause of bee-keeping in the United Kingdom which is expected to accrue from the National Exhibition proposed to be held by the B.B.K.A. in London in connexion with the Indian and Colonial Exhibition is so obvious, and the promises of support so encouraging, as to induce us to keep the question before our readers with a desire to receive further suggestions as to its full development.

At the general meeting of the B.B.K.A. the proposal was most favourably received, and a fund was opened not only for donations towards the expenses, but also as a guarantee to cover all charges. It is to be remembered that the expense of holding such a show will be considerable, and that there will be but little in the way of receipts from the show itself to meet this expense, which is, moreover, quite beyond the usual resources of the Association, and will therefore have to be provided by special subscriptions. The 'Donation Fund' is already well started, and is headed by the generous contribution of 25*l.* from our noble President the Baroness Burdett-Coutts. It is hoped that the whole cost, which is estimated at not less than 200*l.*, will be so met; but in the event of its not being fully covered, the 'Guarantee Fund,' already well inaugurated, will supply the deficiency, the guarantors contributing *pro rata* according to the amounts which they may have severally guaranteed.

The Committee cannot do much in the matter beyond inquiry and arrangement, or incur any serious cost, until these two funds, 'Donation' and 'Guarantee,' are very considerably enlarged, but active preparations and consultations are proceeding with every hope that the proposed exhibition will be found practicable, and be made of lasting benefit to the British honey-producer. It was suggested at the general meeting that there might be many persons who, though unable to give more than a small money donation to the fund, might be able and willing to supplement such gift by a donation of honey, which the Committee would sell at the Show, or otherwise convert into money, and in this way even the humblest producers might contribute to the cause. We have no doubt that the Committee would readily receive the promise of contributions in kind in the way suggested.

Until the scheme is far more advanced it would be impossible to give any very definite indication of the plan to be carried out, for everything must depend in a great measure upon the locality in which the show is to be held. Our present idea is, that as many of our Colonies are to include in their exhibits at the great Exhibition specimens of honey and other apiarian products, our show should be made to take the form of a welcome to our colonial colleagues, and an exhibition of British products and appliances be displayed in friendly comparison with theirs. Such a display would give character and interest to the assemblage of bee-keepers from all parts of the world, and would be not out of harmony with the general object of the great Indian and Colonial Exhibition. This being so, we hope that the Council of the Indian and Colonial Exhibition will, subject to their other arrangements, place at our disposal for the necessary period the large Conservatory, where, in like manner as it is used for flower and fruit shows, a kindred show of bee products may be held to which all our bee-keeping brethren from the Colonies may be made welcome. Such a show, lasting six or eight days, and concluding with a Conversazione, could not fail to interest a very large number, and would, without doubt, also contribute largely to the instruction and profit of our home producers. The committee would have to make a careful and scrupulous choice of objects first for such a representative display in order to show 'the better way' employed in this country, and also to select as large and attractive a collection of honey in its various forms as the means placed at their disposal may admit.

British bee-keepers will perceive the importance of the occasion, and will, we have no doubt, give a ready response to the demand for funds, and a willing aid in the further arrangements to be made.

The amounts already contributed or promised are:—To the 'Donation Fund,' 25*l.*; to the 'Guarantee Fund,' 50*l.*

We would mention that subscriptions to either fund can be sent to Mr. J. Huckle, King's Langley, Herts.

LECTURES ON APICULTURE.

The courses of lectures in connexion with the Institute of Agriculture will this year be delivered at Jermyn Street Museum, Jermyn Street, instead of the Theatre, South Kensington Museum, as heretofore. Mr. Frank R. Cheshire, F.L.S., will commence a short apicultural course of six lectures on Wednesday, the 17th inst., at eight o'clock. The admission in conformity with the charges made for other courses in the Museum will be

sixpence per lecture. We shall publish a syllabus of the course in our next issue. These lectures will be illustrated by living bees and by models and diagrams. Mr. Cheshire's excellence as a lecturer is well known to our readers; and as the place of lecture is more central than South Kensington we have no doubt that many will avail themselves of the opportunity of attending this course.

USEFUL HINTS.

The weather, in East Anglia at all events, maintains its severity. Again we have to report sunless days and frosty nights, the night temperature ranging from 20° to 25° Fahr., and the day temperature but little higher. Our bees have no chance of a thoroughly good cleansing flight. We hear of many colonies lost. One we examined—a large cluster of bees defunct in the centre of the hive, no honey within their reach, although the outside combs contained abundance. This colony perished solely from the absence of winter passages, being unable during the cold weather to reach its food. Dysentery prevails in many apiaries, and will, no doubt, continue to prevail until the sovereign remedy is obtained—bright, warm weather—the only real cure.

The great evil attendant upon dysentery, in those colonies which survive, is a population so reduced that even if spring dwindling does not supervene, the sparse population is unequal to storing surplus honey, however plentiful the income may prove. Such colonies do little more than supply their own needs during the following summer. Hence the great importance of having a large spring population.

Stimulation, Spreading Brood, Equalising Colonies.—On these three points doctors decidedly differ. An experienced and most successful American apiarist adopts them all. In offering to our readers a short digest of his method we will say no more than that it sounds reasonable, and that we have successfully practised it in our own apiary; but it requires great care in carrying out details, indeed, as Cæsar required in military and maritime affairs, that 'all things should be performed at the signal and to the very moment,' (*ad nutum et ad tempus omnes res ab iis administraventur*).

The first step towards success in apiculture is to produce plenty of bees in time for the honey-harvest.

With most of us white clover is the main honey-producing plant, which blooms about June 15th to 20th, and by June 25th is at its best; hence our bees must be in readiness at that time if we wish to succeed. About six weeks are required to build up an ordinary colony in the spring to the point at which they are in prime order for producing honey to the greatest advantage.

Therefore commence to stimulate brood-rearing about the 1st of May. (1.) Go to each colony and look them over, clipping all queens' wings, and equalising stores, so that each colony has enough to carry it on at least two weeks without starvation. At this time, as a rule, each good colony will have brood in four or five combs, the two centre combs containing the largest amount. Now change the position of these combs of brood by placing those which are on the outside in the centre of the brood-nest. This brings the combs having the most brood in them on the outsides. Thus, while the colony has no more brood than it had before, the queen finds plenty of empty cells in the centre of the brood-nest, in combs having some brood in them, and she at once fills these combs with eggs, so that in a few days they will contain more brood than those that were moved to the outside, while the bees will have fed and taken care of this as well as though its position had not been changed. Thus a gain has been made in regard to increasing the brood. (2.) In about eight days, if the weather is favourable, all the hives are again looked over, and this time a frame of honey is taken from the outside of the cluster, and the cappings to the cells broken by passing a knife flatwise over them when the brood-nest is separated in the centre, and this frame of honey, thus prepared, placed therein. At each time of going over the hives be careful to ascertain that each colony has abundant honey to last it at least two weeks, since, when endeavouring to obtain the largest amount of brood possible, the bees must *never* feel the necessity of feeding the brood sparingly on account of scanty stores. Also take care that there are no cracks, or open places, at the top of the hive, to allow the warm air to pass out, but tuck all up as nicely as you would fix your bed on a cold winter's night. (3.) After seven days more have elapsed go over all the hives, and insert another frame of honey in the centre of the brood-nest of each, prepared as before. If at any time you are short of honey, use syrup made of Duncan's granulated sugar, dissolving it in hot water, at the rate of one pound of water to two pounds of sugar. The syrup should be poured from a syrup-can, held some distance above, into combs of worker-cells, both sides of which may thus be filled. (4.) The next time of going over the hives (after eight days) place the outside brood-frames in the centre of the nest—as at first—and put another frame of honey, or syrup, in the centre. (5.) After another week the hives are again looked over, and, if but nine or ten frames are used, this time will complete the stimulating process, for at the end of about five days more, or about the 10th of June, all frames will be full of brood, and the colonies in good condition for receiving the surplus boxes.

In carrying out the above system we have never clipped the queen's wings, nor do we deem it necessary as a part of the system. In the case of weaker colonies, whose queens are below par, we have occasionally supplied them with a frame of brood from a stronger neighbour. The date (May 1st) of commencing operations will require to be varied in this climate according to the season and locality, the variation being as much as two or three weeks; but we advise that the process should not be begun before the second week in April, in an average season and locality.

Uniting weak Colonies.—Except as advised in last 'Hints,' we do not recommend unions at present. The union of three or four weak colonies in order to form one strong one is rarely successful. The better plan is to reserve till later in the season all colonies which about the middle of April occupy, say, five spaces, to confine them to the frames they cover, and to treat them on the same plan as the stronger ones, on the above system—inserting a comb of honey, uncapped, in the centre of the brood-nest, as occasion demands. When the honey-flow arrives, two such colonies may then be united by alternating the combs; forming, thus, one strong one, upon which the surplus boxes may be placed immediately after the union is accomplished. The surplus queens may be utilised for nuclei, or swarming, as desired. Queenless colonies form an exception, and should be united at the earliest opportunity.

Many apiarists will object to the above system of management, that it is all too late—that they want their surplus boxes on the hives by the 1st of May, in order to obtain sections from the early fruit-bloom. In our experience, in nine seasons out of ten, there is no section-storing worthy of the name before the last week of the month in the central parts of England, and but little then. Is it not much wiser to continue building up our colonies to full strength, so as to have them in the best possible condition to take advantage of the great harvest when it comes?

Feeding.—Let it be borne in mind that populous colonies when breeding extensively consume a large amount of food and should be fed as occasion requires. The food at this early date should not be given too thin. Syrup of about the same consisteney as well-

ripened honey is best. The Heddon receipt, as given in former 'Hints,' is a good one.

ENTRANCES must still be kept clear of refuse. When they have been kept open at summer width, let them be gradually, *i.e.*, day by day, contracted to about an inch in width for weak stocks, and 2 in. for strong ones, to prevent robbing, to which there may now be a tendency. It is very important to prevent a beginning, therefore be very careful to avoid the spilling of syrup or littering about of bits of comb, &c.

WATER AND ARTIFICIAL POLLEN will soon be required, and, when fine weather comes—as come it must at last—should be supplied according to former directions.

Continue to keep floor-boards clean and dry, hives well covered up, and disturb as little as possible. A fruitful summer and an abundant harvest often follow a late spring. Now is the time to make all possible preparations for the approaching campaign. Presently our hands will be full.

THINGS-IN-GENERAL.—*Burma.*—Since Upper, as well as Lower, Burma has now become British territory by annexation, and there is a chance of the two being erected into a separate presidency, or governorship, which *may* rival the ancient Burmese Empire in importance and prosperity, it may be interesting to note the condition of apiculture, the various races of bees, &c., in that distant part of 'Greater Britain.' An American missionary, dating from 'Tomgoo, Burma, September 1881,' after describing his schools and mission stations, to the number of seventy, scattered over a large extent of hilly country, refers to bee-keeping. Writing to an American firm for hives, he states that it would cost five times as much to make a hive in Burma as in America, cost of transit included. Carpenter's work of a good sort is very high and very slow, and, at best, is very poor. He speaks with enthusiasm of teaching his converts apiculture, and anticipates sending further orders for hives, so that it is probable that an improved system has already been introduced. The climate he terms 'sickly and hot,' but speaks of it as a splendid country for honey; but mentions that although there are wild bees everywhere, and on bright days their hum fills the air, and swells to a roar on the grand, old trees, covered with bloom, till they look like a bouquet of giants, and sicken the air with the richness of their perfume. He speaks of a large church which contains scores of swarms of the *Apis dorsata*, and announces his intention of obtaining from these a comb of brood, and placing it in a hive of ordinary bees. The common bees of the country are of two kinds—one small, building six and a half cells to the inch, in colour brown, and its wings giving out brilliant colours in the sunlight, gentle, and active; the other somewhat larger, building six cells to the inch, colour black, active and aggressive, and inclined to rob weaker colonies. Of these bees he had five colonies, all doing well. *Apis dorsata* has never, we believe, been domesticated. Although it is thought improbable that this magnificent bee—the largest of its species—can ever flourish, or even exist, in our climate, nevertheless we should rejoice to hear of its domestication in its native country. When transferred to the modern hive, it is said invariably to desert its brood and hive, and again to resort to its native haunts—the boughs of some lofty palm, where it stretches its enormous combs—or to inaccessible rocks, in the crannies of which it delights to suspend its Daedalian structures. In our own mind, there is no doubt that its domestication will be accomplished, and that speedily. Above all things, we should like to make the trial. What an opportunity for a Benton, whose former attempt was carried out and failed under insurmountable difficulties! Given (1) the neighbourhood of *Apis dorsata*, (2) a strong colony of domesticated bees, in a large frame-hive. Remove the queen of the latter. Seven or eight days afterwards cut away all queen-cells. Insert combs of *Apis dorsata* (containing brood in all stages, and eggs), alternating them with the combs of the hive. From these eggs queens are reared. The stock is divided into nuclei, each possessing a virgin queen, which in due course is fecundated by a drone of the *Apis dorsata* race. These nuclei—say, four in number—are built up from other colonies, and may we not exclaim, Q. E. F.? This plan, at least, seems practicable. And then, the pleasure of introducing these brilliant insects into our English apiaries, and endeavouring to acclimatise them! . . . Well, all this may be castle-building, but we should very much like to have the experiment tried.

REVERSIBLE FRAMES once more.—In looking through the published numbers of Mr. Cheshire's new book, *Bees and Bee-keeping*, figs. 4 and G. 36 struck us as having some bearing on this question. In fig. 4, not only is the upward pitch of the *brood*-cell clearly shown, but the spinning-larva and the nymph are represented lying upon their *backs*. The hive, or frame, being reversed (inverted) the larva and nymph will also be inverted. Will these develope as successfully in the unnatural as in the natural position? Again, in G. fig. 36, the curvature, or upward pitch, of the honey-cell is shown to be very great. Surely, facts like these, educed by the highest powers of the microscope, must have considerable weight in arriving at a just solution of the cause 'Inversion *versus* Non-inversion.' Time and trial will solve the problem.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

The first meeting of the newly-elected committee was held at 105 Jermyn Street, on Wednesday, February 24th. Present, the Rev. Dr. Bartrum, the Hon. and Rev. H. Bligh, Captain Bush, T. W. Cowan, J. M. Hooker, the Rev. F. G. Jenyns, the Rev. G. Raynor, the Rev. F. S. Sclater, the Rev. J. L. Seager, D. Stewart, G. Walker, W. O'B. Glennie, Treasurer, and the Secretary. Letters were read from the Rev. F. T. Scott and Captain Campbell regretting their inability to be present.

Resolved unanimously that Mr. T. W. Cowan be elected chairman, and the Hon. and Rev. H. Bligh vice-chairman, for the ensuing year. The following sub-committees were formed:—Finance—Dr. Bartrum, H. Jonas, and G. Walker. County Associations' Business—Revs. F. S. Sclater, J. L. Seager, Captain Bush, D. Stewart, and G. Walker. Educational—Dr. Bartrum, Hon. and Rev. H. Bligh, the Rev. F. G. Jenyns, the Rev. G. Raynor, and the Rev. J. L. Seager. Exhibitions—Captain Bush, J. M. Hooker, H. Jonas, Rev. F. S. Sclater, and D. Stewart. The chairman to be ex officio member of each sub-committee.

The following resolution was passed, in regard to County shows, namely, 'That it is not advisable in the cases of shows held by County Associations that the name of companies be accepted as exhibitors of honey, except in the open classes.'

Various estimates for the printing of sundry pamphlets were considered. It was resolved that steps be taken as early as possible for printing the 'Skep' pamphlet in Welsh.

The Secretary reported that he had made inquiries in respect to the probability of the Association being able to hold an exhibition at South Kensington: the Secretary was instructed to communicate with the President upon the subject.

DERBYSHIRE BEE-KEEPERS' ASSOCIATION.

The fifth annual meeting of the Derbyshire Bee-keepers' Association was held in the Grand Jury-room, Town Hall, Derby, on Tuesday, January 19th, 1886. In the absence of Lord Denman, the Rev. J. Wadham pre-

sided until the principal business had been transacted, when he was compelled to resign his position to Mr. Newton, of Burton. Amongst those present were Messrs. W. T. Atkins, Newton, Austin, T. M. Bryan, Hartland, Handley, Cooper, Wilkes, and others. Mr. D. Cooper, the hon. secretary, read the fourth annual report, which we gave in our last issue. On the motion of the Chairman the report was received and adopted.

Mr. Cooper, the hon. secretary, resigned his position, which was accepted (temporarily) by Mr. W. T. Atkins, 6 North Street, Derby, who is to receive 5*l.* from the funds for the employment of an assistant. The following gentlemen were elected on the committee for the ensuing year:—The Rev. J. Wadham, the Rev. Stafford O'Brien, and Messrs. W. T. Atkins, T. Walker Cox, H. T. Edwards, F. Holbrook, J. Longden, Cooper, Innes, J. Stevens, H. T. Bland, J. H. Richardson and Dr. W. Ogle.

It was decided to hold the usual show of bees and honey at the Agricultural Show at Derby, and the question of a proposed honey fair was referred to the committee for future consideration. The question of providing extractors for district secretaries for the use of members was left to the committee. Votes of thanks were accorded to the Mayor for the use of the room, to Mr. Cooper, the late secretary, and all who had assisted to promote the society's welfare. The meeting terminated with the drawing for two prize hives, which were won by Mr. J. McLean, of Kegworth, and Mr. Wood, of Brassington Street, Clay Cross.

WORCESTERSHIRE BEE-KEEPERS' ASSOCIATION.

On Saturday, Feb. 20, the annual meeting was held in the Guildhall, Worcester. The Mayor (Mr. A. W. Knott) presided; and there were also present—Miss Wilson (Crawle), Mrs. Davis (Welland), Miss Bullock (Kempsey), Rev. W. M. Kingsmill (Bredicot), Rev. E. Val. Williams (Malvern), Rev. R. T. W. Brayne (Whittington), Rev. D. H. C. Preedy (King's Norton), Messrs. A. H. Martin, Hon. Sec. (Evesham), J. Cleasby (Offenham), H. Goldingham, G. H. Latty, H. O. Huntley, Neal (Worcester), M. Allchurch (Church Lench), H. H. Griffin (Hartlebury), S. Tombs (Droitwich), C. H. Haynes, E. A. Dimmock (Hanley Castle), A. Thorpe (Hallow), J. Fehrenback (Kidderminster), E. T. Footman (Martley), J. W. W. Boughton (Wick), J. Hiam (Astwood Bank), and C. Brown, expert (Bewdley).

Mr. Martin, hon. sec., read the annual report, from which it appeared that the number of members show a steady increase, and, in spite of a good many withdrawals, now numbers, at the close of the year, 266, of which 89 are new members. The total income has amounted to 128*l.* 19*s.* 2*d.*, of which amount 59*l.* 5*s.* 6*d.* has been raised by members' subscriptions.

The expert of the Association, Mr. C. Brown, has delivered three lectures during the year—at Evesham, King's Norton, and Hanley Castle—which were illustrated by magic-lantern slides, showing photographs of scientific bee-keeping. These were kindly lent by Mr. Watkin, hon. sec. of the Herefordshire Association. The bee-tent has attended horticultural shows at Redditch, Upton-on-Severn, Hagley, Bricklehampton, King's Norton, Astwood Bank, Blackmore Park, Kidderminster, and Madresfield. The net balance on the proceeds of the bee-tent has amounted to 5*l.* 13*s.* 3*d.*

The annual show of bees, hives, honey, and apiarian appliances, was held in connexion with the meeting of the Worcester City and County Horticultural Society at Rose Hill, Worcester, in the grounds of Walter Holland, Esq., on August 20th and 21st. Prizes were offered to the value of 18*l.*, and there were no less than eighty entries, a considerable increase on last year. In the honey classes there were three entries for the medals and certificate given by the B. B. K. A. The silver medal was awarded to Mr. E. T. Footman, of Martley, for a very good exhibit of sections, mostly 1-lb., and weighing altogether 170 lbs. The bronze medal was taken by Mr. C. Brown, of Bewdley; Dr. Walker and Mr. James Partridge, of Alvechurch, acted as judges in all the classes. An examination for certificates as third-class experts was conducted by Dr. Walker, for which four candidates presented themselves, two of whom—Messrs. W. F. Paddison, of Malvern, and E. T. Footman, of Martley—were successful. One of the members, Mr. W. D. Slade, of Worcester and Cheltenham, has obtained a certificate as second-class expert at the examination which has been held recently. A very interesting report by the expert, Mr. C. Brown, was also read.

Earl Beauchamp was re-elected as president. The following were appointed vice-presidents:—The Bishop of Worcester, the Countess of Dudley, Lords Northwick, Lyttelton, Hindlip, and Edward S. Churchill, Lady Georgina Vernon, Sir Richard Temple, Bart., M.P.; Sir E. Lechmere, Bart., M.P.; Messrs. G. W. Hastings, M.P.; J. Corbett, M.P.; A. W. Knott (Mayor of Worcester). Mr. T. J. Slatter was re-elected hon. treasurer, and Mr. A. H. Martin was re-elected hon. sec., the proposer particularly eulogising the services that he had rendered to the Association, and drawing attention to the great help it had received from him, and to the unvarying courtesy with which he replied to all letters and communications addressed to him. The following were appointed the committee for the present year:—Revs. W. W. Douglas (Salwarpe), C. W. N. Ogilvy, J. Latham, E. W. Isaac, W. M. Kingsmill, R. T. W. Brayne, E. Val. Williams; Messrs. H. H. Griffin, C. H. Haynes, W. B. Henley, J. Partridge, J. Hiam, S. Tombs, H. Goldingham, W. F. Paddison, E. T. Footman, W. B. Williamson, E. A. Dimmock, S. S. Chillingworth, Mrs. Swindon, Mrs. Piers, F. Leigh, Miss Wilson, and Mr. M. Woodward. Messrs. Martin and Haynes were re-elected to represent the Association at the Conferences in London.

The annual ballot for three hives then took place, with the result that they fell to the following;—Messrs. S. S. Chillingworth (Torton, Kidderminster), J. Hiam (Astwood Bank), Geoffrey New (Evesham). A vote of thanks to the Mayor for presiding closed the meeting.

STAFFORDSHIRE BEE-KEEPERS' ASSOCIATION.

The Annual Meeting of members of this Association was held at the Guildhall, Stafford, on Saturday afternoon. Mr. Thomas Salt, of Weeping Cross, occupied the chair, and was accompanied by Mrs. Salt. In all there were about fifty members of the Association present, including the Rev. J. D. Glennie (Croxton), the Rev. A. R. Alsop (Bednal), the Rev. G. R. Bailey (Madeley), the Rev. R. Rigden (Penkridge), the Rev. F. Crewe (St. Dominic's Convent, Stone), Mr. A. H. Heath (hon. secretary and treasurer), Mr. F. D. Mort, Mr. J. Beaumont Piercy, Mr. Archer B. Smith, Mr. E. B. Crisp, &c.

The Hon. Secretary read the annual report, which stated that the society sprang into existence in 1883, and at the end of that year consisted of 218 members. The membership increased in 1884 to 355, and now the society had 501 Members. The spring and autumn visits of the expert had grown so popular in 1884 that the committee appointed two experts for the spring and autumn tours, finding it was impossible for one man to get over the ground in the time necessary for all hives to be carefully put in order for the approaching harvest and winter months. Accordingly, Mr. A. W. Rollins, who had now served three years as expert, and Mr. E. Clowes, of Milton, near Stone (who had been awarded a certificate at a previous examination), started on their spring tour in the first week in April, and between them spent forty-two days in the work of examining 415 frame and 321

straw hives, visiting in all 215 members, and dispensing advice as to future management wherever it was invited or required. In their autumn tour they spent fifty days in visiting 213 members, and in examining 632 frame and 478 straw skeps. Altogether, during the late season they were occupied ninety-two days, as against fifty-eight days spent in similar visits in 1884. The number of stocks examined was 1846, as against 1358 in 1884. All this was evidence that bee-keeping was growing more popular in the county, while the increase in the number of bar-frame hives also showed that bee-keeping was becoming more scientific, and that there was a stronger desire on the part of bee-keepers to make it profitable. The bee-tent, under the management of the Rev. G. R. Bailey, had proved a very popular institution wherever it had been pitched, and the Association was indebted to that gentleman for a handsome profit, which shone forth as a redeeming item in the year's balance-sheet. Mr. Hulme, who had been awarded three silver medals for 2-lb. sections, reported a profit on the last season of 4*l*. He had generously given one back to the Association for future competition. Thomas Bond, Shallowford, had been awarded a silver medal, and a bronze medal had been awarded each to S. Farringdon, J. C. Colman, and Thomas Leese. The report also referred to the annual show at Tamworth, in connexion with the County Agricultural Society's exhibition, which was not financially successful, but gave bee-keepers facilities for seeing the best appliances, while the exhibits of honey were most satisfactory and encouraging.

On the motion of the Rev. J. D. Glennie, the report was unanimously adopted. A statement of the accounts was next submitted, and showed a loss of 2*l*. 8*s*. 11*d*. on the year's work, which would be easily covered by unpaid-up subscriptions. On the motion of the Rev. R. Rigden, the balance-sheet was passed. The Rev. J. D. Glennie proposed, and Mr. F. D. Mort seconded, that Lord Wrottesley, Lord Lieutenant of the county, be re-elected president for the ensuing year, and this was unanimously agreed to. The vice-presidents, the Ven. Archdeacon of Stoke (Sir L. T. Stamer, Bart.), the Hon. A. C. G. Calthorpe, Mr. T. Salt, and Mr. R. Heath, were also re-elected. Mr. A. H. Heath was unanimously re-elected hon. secretary to the Association. As Mr. Heath was desirous of retiring from the treasurership, Mr. George Farrington, of Smallthorne, was elected to that office. The committee was also elected. As the balance-sheet showed a deficit of 7*l*., it was resolved, on the motion of the Rev. R. Rigden, that an additional charge of 6*d*. be paid for each expert's visit. Lots were then cast for a first prize of a bar-frame hive given by the society, and a second prize of a crate of sections by the Hon. Secretary. The winners were Joseph Lowe, Madeley, Newcastle, and Frederick Chell, Coton, Milwich. The meeting terminated with votes of thanks to the committee, to the Mayor for the use of the room, and to Mr. and Mrs. Salt.

NORTH OF SCOTLAND APIARIAN SOCIETY.

The annual general meeting of the North of Scotland Apiarian Society was held within the Café Buildings, Shiprow, on Saturday, February 13th. There was a fair attendance. Mr. Tait, Foveran, occupied the chair, and submitted the first annual report, in the course of which it was mentioned, that there were 141 entries at the show last year, and that 2500 pounds of honey were staged. The accounts showed the income to be 25*l*. 6*s*. 3*d*., and that after paying all expenses there was a small balance in hand in favour of the society. The Chairman moved the adoption of the report, which was seconded by Mr. Beveridge, Torphins, and unanimously adopted. It appeared that Mr. Finlayson, the secretary, had not only given his services gratuitously, but in addition had given a handsome prize. A cordial vote of thanks was therefore passed to Mr. Finlayson for his services to the society. On the motion of Mr. Grant, a cordial vote of thanks was also passed to the Agricultural Society for the prizes they had given them. On the motion of Mr. Ross, a special vote of thanks was also passed to the donors of special prizes. Mr. Grant handed 1*l*. to the society to be disposed of as the committee thought fit. In handing the donation, he mentioned that he had not only got all the honey he required for his own use, but made a profit of 2*l*. on each hive. A vote of thanks was cordially passed to Mr. Grant for his handsome gift. On the motion of the chairman, the Rev. Mr. Innes, Skene, was appointed chairman of committee for next year.

Rev. Mr. Innes, after expressing thanks for his appointment, said, one main object of our society is to encourage bee-culture among our rural population, and to popularise the use of pure honey as a check to the use of glucose and other foreign adulterations. Should new legislation favour a return of the people from the city to the soil, surely this simple industry is fitted to promote both the mental and material prosperity of our cottar and crofter brethren, and it may reasonably be expected that such an enterprise will win the sympathy and support of ministers, teachers, country gentlemen, and all interested in the elevation of rural life. Such associations in England command the highest patronage, and it is gratifying to be able to say that our worthy Lord-Lieutenant and county members of Parliament express their entire approval of the movement.

Mr. Innes handed round copies of the *British Bee Journal*, and Mr. Beveridge, Torphins, suggested that the person who sent them might be requested to send copies to the secretaries of local societies for distribution.

Mr. Black was unanimously elected vice-president for the year, and the committee were re-elected with several additions. It was agreed to form a sub-committee from members in Aberdeen, to assist the secretary. It was agreed to have only one show in the year in Aberdeen.

The rules were then revised, and after some alterations had been made in them, the meeting adjourned.—*Aberdeen Journal*.

GLAMORGANSHIRE BEE-KEEPERS' ASSOCIATION.

I have taken great interest in bee-culture for some years, and, like many other bee-keepers, for the want of a little practical knowledge on the subject have made mistakes. I am persuaded that my errors would not have happened had the Glamorganshire Bee-keepers' Association been in existence. I therefore heartily welcome its birth, feeling fully convinced that I shall benefit thereby—not only, as many bee-keepers are asking, 'What shall I gain in £. *s*. *d*. by joining the Association?' but even there *I* shall benefit; for the useful, practical knowledge diffused by such an Association must prevent the error, and consequently the expense, of former years.

In reply to 'Welsh Novice' and others:—Each district in the County will have its Secretary and representative, to whom any member can appeal in need of advice. But let 'Welsh Novice' send his address to Mr. E. Thornton, Bridgend, Glamorganshire, the Hon. Secretary of the Association, and I am sure he will get full particulars. Indeed the Secretary is only waiting for the leaflets the parent Society are generous enough to provide to sent to many inquiries, it being impossible to answer every letter fully.

Friends, please notice this and have a little patience. The Society is young, and the Committee will not meet before the end of this month, or the first week in March at Bridgend, to complete a list of the rules and regulations of the Society.—GLAM. BEE.

AMONG THE QUEEN-RAISERS IN THE NORTH OF ITALY.

By Thomas B. Blow, F.L.S.,

Author of A Bee-keeper's Experiences in the East, &c.

The many controversies which have arisen during the past three years with respect to the merits or demerits of the Italian bees, induced me, in the interests of British bee-keeping, to pay a visit to the north of Italy to study them in their native habitats, and to come to some decision as to their qualities as compared with other races, and more especially with the English bees.

Those who have carefully noted the published accounts of the Italian bees from their first introduction will remember the surprising successes that were years ago achieved; and I could call to mind several who have kept Italians for many years, and still hold that they are far ahead of the blacks. The Americans, too, quite upheld this opinion, and hold it strongly still.

Carefully considering these facts, I was led to think that the root of the evil, and the reason of the many and grievous complaints that have lately been made, might lie in the inferiority of the queens imported during the last few years. Those who years ago went in strongly for Italians (and have succeeded), usually kept up their stock by breeding from the best, rather than by constantly importing queens. And the same method obtains in America, where most of the Italians are home-raised—not imported—and I think it will be admitted on all sides, that, as far as scientific queen-raising is concerned, the Americans stand at the head of the world: though the successful persons in England, that I allude to, are probably individually equal.

To get the best results we ought, undoubtedly, to import the finest Italian queens, and then to raise the best from them here; keeping up the stock by occasional importations, perhaps. In this way we can perpetuate the best features of the race, and at the same time get bees that are perfectly acclimatised. For it is an admitted fact, that the bees, the immediate progeny of imported queens, are far more liable to disease—especially dysentery—than the progeny of a home-raised Italian. And, with the facilities which modern bee-keepers have, there is not the least difficulty in getting the home-raised queens purely mated, and thus practically keeping our strain pure, if absolute purity is desirable.

The complaints made by those dissatisfied with Italians are: (1) They do not winter well; (2) As honey producers they do not equal the English bee; (3) That they are very vicious and unmanageable; (4) and lastly, some have asserted that a very virulent form of foul brood has been introduced by them. From an examination (extending over a considerable time) of many apiaries, I have come to the conclusion that most of the evil repute that has fallen upon Italians has been brought about by the inferior queens sent. In some cases the breeders knew nothing about their business, and procured the cheap queens which are sent so freely in the autumn, by going round and collecting them from the stocks condemned by the country people to be taken up for the honey; they get these and the bees for about a franc a stock. By this system many queens would be quite old and worn out, others unfertilised, and therefore drone-breeders: and in a district where foul brood occurred, of course the disease would go with the queens, and disastrous results would follow by its introduction into the apiary of the unsuspecting British bee-keeper. I have in my mind's eye one case of a well-known cottage bee-keeper, whose apiary was utterly ruined by the introduction of foul brood by Italian queens. This system of getting queens from condemned bees I saw in full swing in many cases (in one case by the servants of a well-known exporter); the time of year being most favourable for this practice, and I certainly saw several fine examples of foul-broody combs.

In other apiaries no trouble seemed to be taken with the quality of the queens, such as selecting the best queens to raise progeny from, nor was any attention paid to the raising of drones from suitable stocks. These great considerations were quite neglected; the great point seeming to be, the largest number of queens in the shortest possible time, and with the least trouble; and, as far as I can judge, many were sent off without it being definitely known that they were fertilised, and I feel sure that some such queens arrive in England and are here fertilised, as, in the course of my experience as an expert, I have had shown to me many stocks of bees that I was assured were the progeny of an imported queen, but were certainly hybrids. Again, on inquiry after some of those who advertise their finest Italians in the Continental and American Bee Journals (American especially) I found that they were simply agents—people who hardly knew what a queen was; they bought their queens from the country folk, and all their part of the business was to sell them: need I add that these people did not wish to see me?

My visits to apiaries extended over the country between Bellinzona and Montselice; this embraced the mountainous district of the northern Italian lakes, the plains of Lombardy, and again the hilly country around Bologna.

I may say at once that I certainly prefer the bees from the mountains, as they seemed much more vigorous and hardy; and the results in the way of honey-gathering, as far as I could get at facts, were certainly far better. The bees from these hilly parts would, too, be better suited for our climate. The number of apiaries visited was large, yet I can count upon the fingers of one hand all those who knew anything about their business; and if those who took a real pride in the production of their queens, and who use really scientific means to insure the best results, then the number would certainly be less than five.

I shall describe the apiaries of the best of these raisers, and their methods; but before doing so, will give the conclusions which I have come to with regard to Italians: That, excepting perhaps Carniolans, there are no better bees than Italians, if care is taken to get the best queens from a raiser of recognised merit.

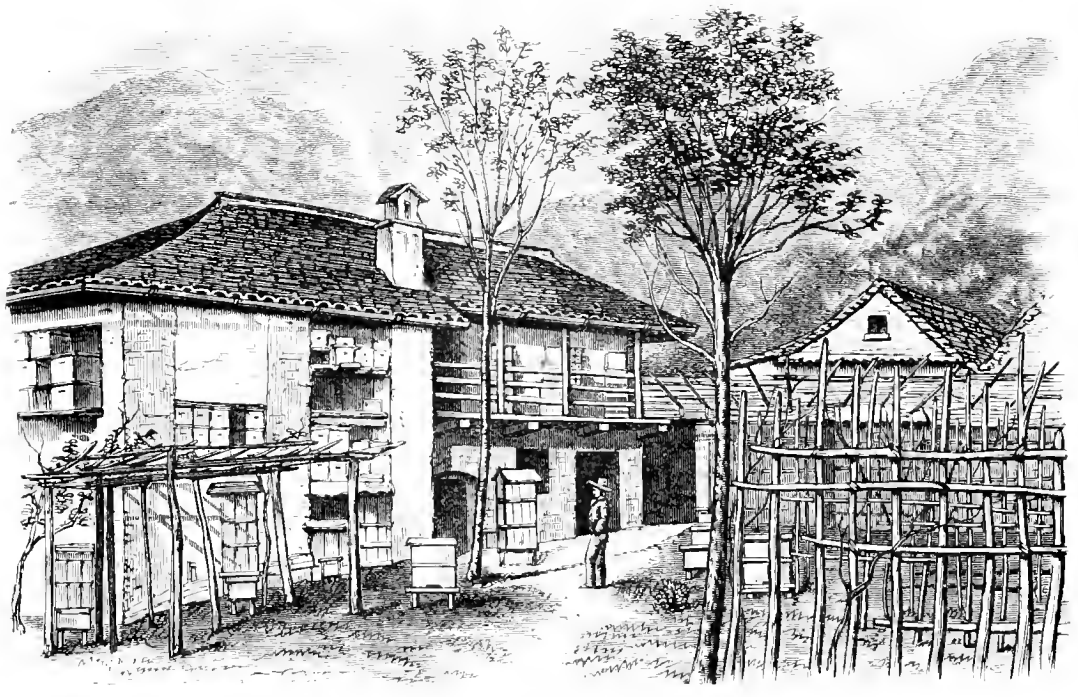
That the bees of the mountains are hardy, vigorous workers, great honey-gatherers, prolific, and certainly gentle, and in their own country not given to robbing much.

That, to get the best results from Italian bees, we must get a good strain to start with, and then, by careful selection, raise our own queens, and be constantly on the look-out for those having the most desirable characteristics, and to propagate from them only.

I can name one very striking case in my own county where all these points have had most careful attention given to them, and with the result that that bee-keeper is not only the best in the county, but one of the best in England as far as results go; and practical results (the largest amount of honey, of the highest possible quality, got with the least expenditure of labour on the part of the bee-keeper) are what we require in this age of keen competition.

The first apiary which I visited belonged to Jean Pometta, and was on the hills above Gudo, near Bellinzona. He had promised to meet me at Bellinzona station; but on account of the breakdown of the telegraph wires, owing to a heavy fall of snow, he failed to be there. However, it was not much trouble to find him. Everybody whom I asked was able to direct me to the man who had a lot of bees; and after a most picturesque walk of two or three miles I arrived at his home, in the midst of vineyards, and with a waterfall close by, which would have made the fortune of any man in England who possessed

it. He was from home; not having got my telegram he did not expect me. I had a chance, therefore, of looking at his apiary at my leisure and without any interruption, which is always an advantage. His father (a venerable old man) received me in a very hospitable manner, and,



The Apiary of Mr. Jean Pometta at Godo.

as Mr. Pometta is a vineyard-owner as well as a queen-raiser, I was able to see all the vintage operations in full swing. I may say that he takes pride in his wine products as well as in his bees; and he showed me with great interest an ancient-looking, squat flagon of Aqua Vitæ, very old, of his own distilling, that had taken a gold medal at Zurich.

I found an immense number of stocks of bees, many of them in bar-frame hives with straw sides; the majority of them on the Italian plan, opening at back, and iron tongs being used to remove the combs. There were, too, a large number of nucleus hives, with bar-frames lifting out in the ordinary way. The bees were of the leather-coloured strain, not the bright yellow-coloured bees such as I saw later on in Lombardy. To show their energy, I may mention, that Mr. Pometta told me that they are usually at work at six in the morning, and that on one or two occasions he actually saw them at work by very bright moonlight. We have heard this same story from the Americans, and I fear every one has doubted it.

On Mr. Pometta's return we went through many stocks, and I had explained to me his whole system of queen-rearing. I found that I had just missed Mr. Cowan and M. Bertrand, who had called about two days before on their return journey from the bee-show at Milan.

The system used of rearing queens depends upon the time of year. In the early spring (when loss of heat must be much guarded against) a stock is taken, and, by means of three dummies, is divided into four nuclei, the hive being made with four entrances for this purpose. In this way five queens are secured from one stock; and, though the system is a somewhat wasteful one (Fig. 1), yet it answers, as the price obtained for queens in early spring is comparatively high. Another plan is to preserve a large number of small stocks with young queens in the autumn. In the spring two or three of these can be united, and one strong stock formed, and the surplus queens sold.

As the season advances, the nucleus hives are used; each nucleus being large enough to be again divided into two. (Fig. 2.) By this plan better queens can be reared, and

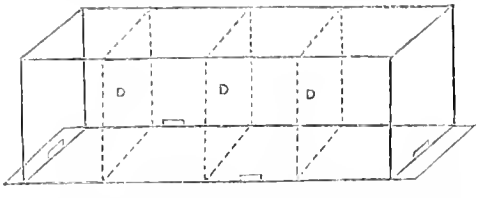


Fig. 1. Hive divided into four for early Queen raising.

in good quantity too. The bars of these are of just such a size that two will fit into the large bars of the Italian hives. This, of course, is of great service to the queen-raiser in many ways, such as making up nuclei for queen fertilisation, and afterwards for strengthening such with hatching-brood.

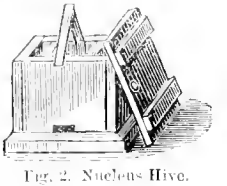


Fig. 2. Nucleus Hive.

The finest queens are selected to raise progeny from; and to secure eggs all of one age two small frames are placed in one larger one, and this introduced into the centre of the stock containing the queens whose eggs we desire. Or, if this queen is in a small hive, one bar of comb is placed in the centre; the comb should be fairly fresh and new, as, if so, it will be more regularly and readily filled with eggs. On the fourth day these combs will be found filled with newly hatched eggs. The combs are cut from the bars, and sliced up as shown in illustration (Fig. 3). The egg in each alternate cell is then removed (Fig. 4), and the strip (Fig. 4*a*) fastened with pins into another bar half full of comb. See illustration (Fig. 5).

If there is a very great demand for queens one bar can be made to contain two strips of comb fastened in this way, (Fig. 6), though usually only one strip is used. These bars are placed in a suitable stock, and we soon have beautifully regular rows of queen-cells produced. The cells can be cut apart without injury, and inserted in the nuclei for subsequent hatching, and consequent fertilisation, and we get thus far better results than by the old plan of notching combs to induce queens to raise queen-cells (Fig. 6*a*).

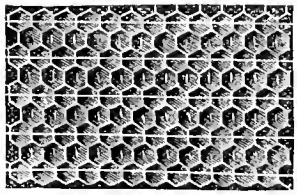


Fig. 3. Comb full of eggs. White lines showing how it should be sliced up.

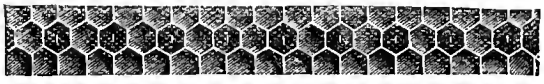


Fig. 4. Egg in alternate cells removed.

Mr. Pometta thinks it of the highest importance that each grub should have a full supply of royal jelly; the test of this is that some should be left in the cell, after the queen has hatched; therefore, before the cells are sealed over, he looks through and picks out with his knife any with an apparent short supply. Still further, to secure these desired

Fig. 4*a*. Strip ready for fastening in.

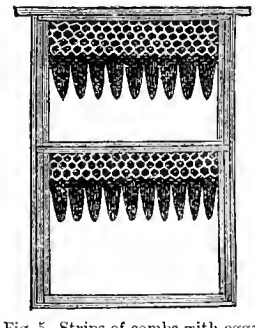


Fig. 5. Strips of combs with eggs in small bars, and two small bars fixed in one large one.

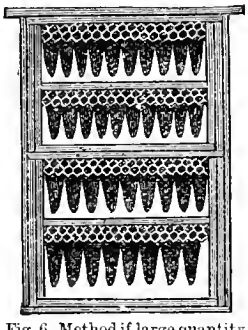


Fig. 6. Method if large quantity of queens are wanted.

results, he takes care that the hive into which the rows of cells are put for feeding and rearing, does not contain brood in the larval state, as this brood would perhaps get food to the detriment of the queen-cells. In about a week the sealed cells are cut apart, and placed in nuclei to hatch and get fertilised; and after this has happened the young queens are packed and sent off, and fresh queen-cells introduced. It is, however, desirable to wait two or three days before introducing fresh queen-cells, especially if the bees are old; and then, if with one sealed cell, two or three open ones are introduced, it often prevents the sealed one being torn down. Of course, sometimes more queen-cells are ready for hatching than there are nuclei ready to receive them. In this case Mr. Pometta uses a very successful series of queen-cages. (See figs. 7 and 8.) The cells are put into these, and a bit of sponge with honey and water is put to each, and the whole affair placed in the hive. The queens hatch, and can be kept till nuclei are ready for them. Three or four days, however, is as long as they should be kept in these cages. The larger cage (Fig. 9) is used for putting in fertile queens. When these unfertilised queens are introduced into the nuclei they must be caged; and if, when we go to release them, we find the bees attempting to gnaw the cage, then it is unsafe; but if they are fanning, then we may release them with certainty of success.

Fig. 6*a*. The old plan of notching combs to induce bees to raise queen-cells.

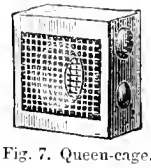


Fig. 7. Queen-cage.

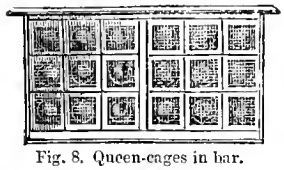


Fig. 8. Queen-cages in bar.

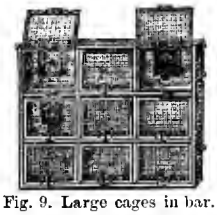


Fig. 9. Large cages in bar.

The packing of queens was next shown. Heather honey being used to sustain the bees intended for Europe, whilst clover-honey is used for those going to America, and other long journeys; the heather not suiting the bees so well when they have to be shut up for a long period.

Though Italians are considered in this country as proof against wax-moth, they certainly cannot contend always successfully against it in their own country, for I saw several colonies much infested.

Next day we went to Gordola to see another apiary, and also the workshops where the queen-boxes are made up.

Mr. Pometta also has a considerable apiary at Airolo—just where the Gothard Tunnel comes out on the Italian side. The honey from this district is extremely fine, though the place is too high for queen-rearing.

Mr. Pometta notes three kinds of drones—black, white, and red-eyed. During our drives we looked at several country apiaries, and noticed that the bees were kept in tubs, boxes, pieces of trees, &c., with crossed sticks inside for the bees to steady their combs by, and that the entrance was often in the shape of a cross, the natives believing that this brings luck. The entrances were often halfway up the hive, so that the bees would not have so far to go to reach the cluster in the winter time, nor would the entrance be liable to be blocked by dead bees. This same style of entrance prevails very much in straw hives in Belgium and the north of France. Great carelessness seems to prevail in leaving about the apiaries fragments of honey and comb, and yet, to my surprise, this practice did not appear to cause robbing. I was informed that the average weight of the swarms ranged from two and a half to three kilogrammes.

Mr. Pometta is one of the few people in Italy who make comb-foundation; this he produces on a very fine Dunham machine: but this he had never been able to get geared quite correctly, and consequently was not able to get absolutely perfect foundation. It was with great pleasure that I took off my coat, and turned up my sleeves, and had a turn at foundation-making; and having got the gear in order, we turned out some foundation in splendid style. I was glad thus to render some little return for all the information which he had given and all the hospitality he had shown me.

On my way to the station we visited the apiary of M. Mona, who sends his bees to Germany principally: it is a fairly large concern, although the system employed was not, I consider, very advanced or scientific. There I saw a solar wax extractor, which in the rays of an Italian sun was answering well, and the resulting wax was all that could be desired.

There are many other devices which Mr. Pometta uses that space would fail me to tell; but I can say, that as I parted with him at the station, I felt that I was leaving a master of the art of queen-raising, and that I had added much to my stock of knowledge.

In later articles I shall give details of my visits to Dr. Dubini of Gallarate, to Sartori of Milan, Mdme. Chinni and Mr. Paglia of Bologna, and Mr. Fiorini of Montselice.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' *All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PLANTS FLOWERING IN MARCH.

[153.] The following bee flowers may be expected to flower this month:—Whin, peach, wallflower, elm, hazel, crocus, willow, apricot, snowdrop, laurustinus, white iberis, and Anemone hortensis.—Hy. Dobbie, *Thickthorn, Norwich.*

FOUNDATION FOR SUPERS.—[80.]

[154.] On page 50, present volume, we find these words:—'For several years it was my practice when supering, to fill each section with comb-foundation, *the result of which, so far as rapidly-filled sections go, was most satisfactory*' (the italics are my own).

My own opinion upon the indiscriminate use of foundation in the stock chamber has already been given. For building up previous to the honey show, we have at least two months to make all needed preparations; while in the case of swarms returned on the parent stand, we have there represented the required standard of strength, and nothing further is to be desired than that just sufficient brood shall be produced to maintain that strength. This desideratum is best secured by arranging most of the stock frames with starters only, as before stated by me, thus limiting the production of brood; while by a careful manipulation of the sections above, one will there secure in surplus honey what would otherwise be expended in brood-raising to excess below.

I do my best to study true economy, but I see nothing but a 'cheese-paring' policy in the recommendation of Mr. Sharp following after his words quoted at the head of this article. When the season is upon us, we want every surplus receptacle in place ready for the honey to be poured in, and *nothing less than a full sheet* of foundation will place us in a position to secure all the nectar the bees should obtain from a given district.

Mr. Sharp considers that the extra custom obtained for natural comb will more than compensate him for the decreased yield he says he is aware will be the consequence if he discontinues large sheets of foundation in the sections; but he does not appear to be aware of the fact that the difference between supply and supers with full sheets of foundation and starters only, represents not less than the loss of 20 lbs. of honey to the colony. How then can Mr. Sharp supply an increased demand from his decreased yield?

Your correspondent, judging from above question, knows how to obtain satisfactory results, in that he says sections are rapidly filled where foundation has been used, but if he means in future to be content with the slower and less profitable process of allowing the bees to wait and build their own comb in the supers, while hundreds of pounds of honey are being lost for want of the necessary store-room just at the critical and fast-fleeting moment, then he may as well give up at once, for of a certainty he will be far behind in the present race of keen competition.

After all, it is not the public which, as a rule, can judge between honey-comb built upon light foundation and that without it. The bee-keeper is to blame if he permits any such imaginary distinction to gain credence among his customers: and when once such ideas are afloat, no one can tell what they may end in. Therefore, in the interests of the community at large, and their own in particular, I would caution your correspondent, and others, not to injure the honey trade by any such statements, as they will be among the first to wish their own words had not been uttered; for most certainly a season or two with small starters in sections will convince them of their error; and only too glad will they be to return to the ways they have but lately condemned.—S. Simmins.

THE USE OF DRONES.—A REPLY TO 'STUDENT.'

[155.] In approaching the subject of the natural history of animals kept wholly or partially in a domesticated state, there is great danger of reasoning simply from what we see of them in their domesticated state, and judging of their actions from that point of view alone. There is no apparent reason why a dog should turn round and round before lying down on a hearthrug. But follow up the action to the original wild state of the animal, and the object becomes evident.

Reasoning from a false and imperfect view of the case, founded upon his observation of colonies of bees in an apiary, 'Student' comes to some startling conclusions. Not the least being that such a thing as 'senseless extravagance' can possibly exist in Nature. His only ground for this startler being his opinion that a few dozen drones in a hive would be amply sufficient for the fertilisation of queens.

Let us turn to Nature for instruction and study the subject from what we learn as to the requirements of bees in a natural state.

The natural location of a colony of bees is in a hollow tree, or in a cleft in a rock on the face of a cliff.

Again; naturally, colonies of bees are not congregated together in apiaries of five, ten, fifty, or one hundred colonies, but are scattered according to where suitable spots for the nests may be found. The distance between any two colonies being measured by scores, or hundreds, or even thousands, of yards. Whether in a state of nature, or of domestication, if a colony which has sent out a swarm loses its young queen at a time when the larvæ are too far advanced for raising another, it means utter annihilation: and did not Nature guard against this, there would be senseless waste indeed.

Now, how is this loss guarded against? I say by offering every facility for the meeting of queens and drones, and reducing the chances of failure to a minimum.

The queens and drones soar to the upper air. Why? To surmount the highest tree-tops of the forest and the brow of the cliff in which the nests are in a state of nature situated, and so afford to the queens and drones a clear and uninterrupted view of each other, and also to get above the flight of insectivorous birds.

Each colony produces some thousands of drones. Why? Because, if only a few dozen were produced there would be danger of a queen not meeting with a drone, or only meeting with one related to her: but, as it is, when, on a fine day, there are thousands of drones issuing from each colony all eager to meet with a consort, the upper region of the air must be traversed in every direction by them, and a queen, on arriving at the height (whatever it may be) at which they spread themselves, is certain to be spied out by one.

As to the drone having any fore-knowledge of his fate, that may be dismissed as a perfectly unfounded idea. The same might be said of a certain species of spider where the male after becoming a husband is devoured by his wife. Yet that species does not become extinct from the male looking upon his connubial bliss as suicide. The instinct or desire for propagating

its species is so deeply implanted in every living thing as to be invincible. I have often suggested, in conversation with other bee-keepers, that the upper region of the air is, on a fine day, fairly peopled with drones, notably, to Mr. Cheshire, nearly two years ago, when I suggested to him a plan, whereby the height to which queens and drones ascend *might* (*possibly*) be ascertained, viz., by attaching a virgin queen by a fine silken thread to a small captive balloon, trying various heights until success was shown. It would be an interesting experiment, although not probably of much practical value.

It would be instructive if 'Student' informed us how he proves that bees cannot help knowing of the proximity of other hives, and that each contain its proper quota of drones (foot-note, p. 71). If they did know it they might possibly restrict their own production of drones. But, as it is, they follow their own unfailing instinct implanted in them, in order that they might be fruitful and multiply, long before the invention of bar-frame hives, placed in quincunx order, and furnished with worker foundation, by 'Him who saw everything that he had made, and Behold it was very good!' For man to talk of 'senseless extravagance,' seems to approach the line at which impiety begins.—F. Lyon.

GREETINGS—REMOVING SUPERS—WATERPROOF HIVES.

[156.] How changed Britain is from that state, of which Horace wrote:—

'Visam Britannos hospitibus feros.'

I find myself—especially in the pages of our *Bee Journal*—in the midst of kind, indulgent friends; in fact, I meditate, 'shaking hands all round.'

As for our noble Editor and Chief, I stand in awe of him!

'Dis te minorem quod geris, imperas:
Hinc omne principium, huc refer exitum.'

But to 'Amateur Expert,' and our excellent friend, 'Plate-layer,' Messrs. Simmins & Co., I send most cordial greetings, hoping that all their queens are prolific and their honey (at least) one shilling per pound.

I bear in mind a query of last year, and venture to give my experience.

In removing supers, with and without smoke, I have found the queen therein. Twice I have taken up her majesty, and having found her on the ground where I manipulate, I have carried her to her hive and placed her on her throne. I carry the whole super right away to a convenient apartment, invert a skep, take sections one by one, and shake the bees into the skep—they are always quiet—I then take the whole mass and pour them into their proper hive. This is very easily accomplished, so I would add, by way of general caution, take care not to lose your queen. The question that now appears to flutter my bee friends, is, 'How to manufacture a cheap waterproof roof?'

I venture to add my experience, but it is adapted for small hives only of twelve frames and under.

I obtain a common box about two inches wider and longer than my hive, open at one end—the wide end. I flatten down some sawdust in the bottom of it, nail over that firmly a hive-sheet cover—canvass or calico. Turn it over bottom up, and place it on my hive. It completely covers the hive, and, projecting all round, keeps it quite dry in winter, and quite cool in summer. I make the bottom (which is now the top) waterproof in this way, I nail a strip of felt, a little larger than top surface, along one of the outer edges: stuff some hay under it to curve the surface; then finish nailing. I paint it all over, box and all. It can be fastened down in many ways—two or three coats of paint will be necessary.

This is a cheap cover, and readily made; any amateur can construct one. I find it large enough to cover a crate of sections, and my hives are perfectly dry. With a weight on the top it fits very close on the frames, and those I have so treated are now very strong in bees.—Ubique, *Horetown Rectory, Wexford.*

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[126.] *Substitute for Smoker.*—For the convenience of every poor cottager not being able to purchase a good smoker, which every bee-fancier cannot very well do without, it would be desirable to ask some hive-manufacturer if a club could not be formed upon easy terms, namely, 6*d.* per week, until a good smoker, or any other bee appliance, is paid for. This could be done with safety through any member of the B. K. A. or our District Secretary.—C. Cox.

[126.] *Smoker.*—Yes, a roll of cotton rag or old corduroy will answer fairly well. I have used it many times when examining hives away from home, and if a piece of brick or tile is placed on it when not in hand it will smoulder very slowly.—Woodleigh.

[126.] *Smoker Fuel.* (A. P. Howes.)—If those who fad with brown paper knew what an excellent material German peat moss is, I venture to say the paper would be discarded. I get a bale about 42 inches × 21 × 21, costing 3*s.* 6*d.* and carriage from Mitchell and Jackson, importers, Princes Dockside, Hull. When it is dried I think there is nothing to equal it for keeping alight and quantity of smoke emitted. When on the moors last autumn I tried the peat used by the residents there in place of coal and found it not nearly so good as the above. Same may be said of gardening peat. I have found for the first time in eight or nine years' experience several hives slightly dysenteric, caused no doubt by protracted cold.—J. C. Lambert.

[127.] *Manipulating House.* (Irish Novice.)—If the hives can be placed permanently inside the house with holes made in the walls for the bees to pass through, the object will be gained. There is no doubt great advantage in being able to manipulate in bad weather, and this can be accomplished in a bee-house by throwing open ventilators and allowing the bees to return quickly to the hive, which for the purpose need not, and must not, be moved from its stage.—T. F. Ward.

[128.] *Narrow Sections.*—No. Taking weight for weight they must of necessity take longer, as there would be a larger surface for the bees to seal. Many people think that the dividers prove an obstruction to the bees in filling sections, but a little consideration of the subject would soon dispel any such ideas.—Woodleigh.

[129.] *Doubling.*—Double by all means, say at end of this month or beginning of next; and you will undoubtedly increase your take of honey (extracted of course) during the coming season if you attend to 'Useful Hints' and use your own judgment.—Woodleigh.

[132.] *Distances between Frames and Floor-board.* (F. L.)—Don't exceed ½ inch; but I have never known bees build combs below the frames, and not very often to the bottom bar.—Woodleigh.

[144.] *Preventing Casts.*—Milson had better drive his bees and transfer his combs at once—(not now, March 1st, I don't mean)—to his frame-hive. The only way to prevent casts issuing would be to cut out all queen-cells but one; but I think with straw skeps he would find it a rather awkward job. I find the small rotary disk of wood fixed on handle with screw answer well for fixing foundation in sections; any of the appliance-dealers keep them in stock.—Woodleigh.

[144.] *Preventing Casts.* (Milsom.)—This is a most difficult matter to do with a straw skep, and exemplifies one of the numerous advantages bar-frames possess over them. As an expert I do not care for such a mode of transferring, preferring to do it right off in early spring, and have found it pay better, but with novices it is best to advise such a course as you propose to do. There is a

chance—but very slender—of your being able to cut out the cells; if you cannot, you must let them take their chance, and return casts. The easiest way of fixing starters in sections is by rubbing a piece of wax on the section where starter is to be fixed, then lay the starter true on it, and rub the edges of same with the wet handle of a table knife, then turn it up at right angles, and it is fixed as firmly as required.—W. B. Webster.

[144.] *Preventing Casts.* (Milson.)—About a week after you have driven the swarm, turn up the skep and cut out all the queen-cells you can see *except one*, you will probably miss one or more even then. So late at night and early morning, from the ninth day on to the sixteenth, listen for 'piping,' if you hear it they will cast in a few hours. (2.) *Fixing Foundation.*—Melt a little wax of good colour, and use it as you would glue, work in front of a fire and let your sections be warm, test each one when cool to see that your work is sound.—Amateur Expert.

[145.] *Dead Brood.* (W. H. H.) If the combs are very old, melt them up; if new and otherwise serviceable, let them alone to the bees.—Amateur Expert.

[145.] *Dead Brood.* (W. H. H.)—This is not necessarily a case of 'foul brood,' but it looks very much like it. You ought not to have been manipulating the other day. If you have been doing so lately, in such weather as we have had, I am surprised you have any bees at all. Send some of the capped cells to the Editor, when no doubt he will be kind enough to get them microscopically examined, when you will have a correct answer.—W. B. Webster.

[146.] *House for Extracting, &c.* (A. Snook.)—If possible to make it bee-proof it would be very suitable and, as you say, 'convenient.' Give it a good coat of tar outside, the bees abhor that, and do NOT use it, if tarred, to ripen honey in, *because in very hot weather the honey will absorb the flavour of the tar.* Honey and Tar!! Oh!!!—Amateur Expert.

[146.] *House for Extracting Honey.* (A. Snook.)—It will do very nicely if you make it bee-proof. Stop up crevices with any material suitable, and cover open windows with gauze.—W. B. Webster.

[146.] *House for Extracting Honey.* (A. Snook.)—It would be very unwise indeed for you to form a room in your bee-house for the purpose you state. All such work should be done as far away from your stocks as convenient, and in a closed building; bees having a strong liking for honey quickly scent it, besides other bees than your own might pay you a visit, and the result probably would be a regular *mêlée* in your apiary. Allow me to suggest to you to convert the unoccupied portion of your bee-house into a little smoke-room, from which watch your bees working, or even a store-room for sundries, of which bee-keepers, as a rule, generally have plenty.—R. R. Godfrey.

[147.] *A Query.* (J. C. Andrew, Minorca.)—Why indeed? Give it up. Why does a plunging horse when held by the tongue stand perfectly motionless? Or why is a donkey with a heavy weight suspended to its tail never known to hee-haw?—Amateur Expert.

[147.] *A Query.* (J. C. Andrew.)—I am almost ashamed to own that I was simple enough to try it twice, and was twice rewarded for my pains.—W. B. Webster.

[148.] *Bell Glass.* (Albion.)—If you require the bell glass for exhibition, it will be much the safest plan to use excluder zinc; place it with the burr side downwards.—W. B. Webster.

[148.] *Bell Glass.* (Albion.)—I see no reason why you may not work successfully a bell-glass as you wish without excluder-zinc. My first experience of a glass super was last season. I bought one of Messrs. Neighbour the diameter of which is about 14 inches, depth 9 inches; this I put on the top of an eight-framed hive, having previously fixed comb guides about an inch deep. I then cut a hole in quilt about 3 inches in diameter, and gave the bees free access to it. I padded well with sacking both at the top and round to keep up temperature. The bees soon began drawing out the comb, and rapidly filled it with about 16 lbs. of first-class honey; there was no trace of any brood or brood-comb. When super was completed I took it off, bees and all, put it in a box made quite dark, and left a hole just large enough for one bee to escape at the time, and on looking in about an hour's time found both super and box quite emptied of bees. The super also acted as an observatory hive, being a source of much pleasure to me to see my favourites working.—A. E. Snook.

[148.] *Bell Glass.* (Albion.)—Cut one or two slits in a quilt, about ½ inch wide and 5 inches long, and stand the bell glass over the slits and try the result.—Amateur Expert.

[148.] *Bell-glass.*—'Albion' will err on the right side if he uses the zinc (oblong holes); he may not get it filled quite so quickly, but he will get it purer, as the zinc prevents to a great extent the storing of pollen in supers.—Woodleigh.

[149.] *Tinned Wire.* (Albion.)—Sorry I cannot tell you where to purchase the right kind except through the usual dealers. I never use it. It is important to get the right kind or the bees will not breed in each cell through which the wire passes, we have seen it so repeatedly; very fine copper wire SILVERED is the best. The bees would build the comb as usual, working to the wire, and by warming the wire and foundation you may press in full sheets, if not you will probably get an excess of drone comb. Amateur Expert.

[149.] *Tinned Wire.*—Albion should obtain some No. 32 wire—to be had of most ironmongers—and lace his frames as proposed; it is a most excellent way and I have had great success with it. You must warm the foundation before pressing on to the wires. You will require a piece of board same size as inside of frames, and three-eighths thick to place the foundation upon while pressing the wires into it.—Chester Amateur.

[149.] *Tinned Wire.*—If 'Albion' or any other bee-keeper will correspond with me, knowing the difficulty there is to obtain fine tinned copper wire in small quantities, I will guarantee to supply them with the same on bobbins at a reasonable price.—C. Wilson, *Oakamoor, Stoke-on-Trent.*

[149.] *Tinned Wire.* (Albion.)—Use sheets of foundation and press the wire into it with a button hook, having a slot filed in it lengthways. All respectable ironmongers keep it or will get it for you.—W. B. Webster.

[150.] *A Beginner.* (Jas. Hodgkinson.)—Write to T. S. Ball, Town Clerk's Office, Preston, who will, no doubt, supply you with the required information, and may be able to give you addresses of bee-keepers in your vicinity.—Chester Amateur.

[150.] *A Beginner's Desiderata.*—1st. Black bees for Blackburn district—a natural swarm of 3½ or 4-lbs. weight. 2. Bees, hive, smoker, veil, foundation. 3. About 2*l.* if you start with a good substantial hive, &c., or 30*s.* will start you with a 12*s.* hive. Month of May.—Woodleigh.

[150.] *A Beginner's Desiderata.* (James Hodgkinson.)—1. Cyprians if you have good nerves, some amount of skill, and a tough skin; otherwise natives. 2. Hive, veil, smoker, feeder. 3. Purchase now and refer to catalogues, and—your own pocket. 4. Sorry I cannot help you, perhaps the Editor will.—Amateur Expert.

[150.] *A Beginner's Desiderata.* (James Hodgkinson.)—1. Ligurians or Carniolans. If you do not care to go to the expense of such bees, then English blacks, and a bar-frame hive. 2. Bees, hive, rack, sections, smoker, foundation, feeder, and book. 3. About 2*l.* 5*s.* or more, according to description of bees and hive. 4. Look around you, or go to the Secretary of your County Association and join. I am willing to give you any advice providing you don't mind paying postage.—W. B. Webster.

[151.] *Bee Houses.* (E. J. Gibbins.)—Root's *A B C of Bee Culture* gives a description of such a house.—W. B. Webster.

[151.] *Bee-houses.* (E. J. Gibbins.)—The former part of your query would require an answer too long for this column. There were the dimensions of one given very recently (page 26, No. for January 21st), but I presume you want one large enough to work and manipulate in; if so, see answers given recently to 127, and Mr. Raynor's pamphlet on bee-houses. The chief advantages are, you can keep the hives in them ranged on shelves, with flight-holes cut through the walls of the house, and they give you protection from bees and weather while manipulating, but there are the very decided drawbacks given in answer to 'Irish Novice' (127.)—Amateur Expert.

[151.] *Bee House.* (E. J. Gibbins.)—I should strongly advise you not to build a bee-house, but have your bees in separate hives; the disadvantages of a bee-house are almost innumerable. The one I had experience of contained ten stocks, and I had to carry the top ones into the open whenever manipulating.—Chester Amateur.

[152.] *Moving Bees.* (E. J. G.)—You may leave them until the end of March and not suffocate them; give as much air as possible at the entrances, closed with perforated zinc; place the hives on straw in the bottom of the waggon and go as smoothly as possible, and choose the evening.—Amateur Expert.

[152.] *Moving Hives.*—You can move your hive with safety at any time to suit your own convenience. I should take the morning for the job when the weather was temperate. Confine them with zinc at entrance, and fasten a strip of wood with screws to prevent frames rocking on the journey. If you cannot manage that, place a section-crate on top of quilt, and tie with cord over the top of crate and outside of hive between legs, thereby fixing the frames. Some straw in bed of van will help to break the shaking and jolting.—Woodleigh.

[152.] *Removing Bees.* (E. J. G.)—It would have been better to have removed your bees to their new quarters at once, but as you could not be there to look after them, let them remain where they are until such time as you can, as so soon as the weather breaks in all probability they will require your attention. In packing for the journey, open the entrance to its full extent and close it with perforated zinc, do not disturb quilt, but see that it is secure, fasten down roof. This work must, of course, be done at evening when the bees are in; on having placed hives on a spring van, pack between each small bundles of straw to keep them steady, and to prevent jarring.—R. R. Godfrey.

[152.] *Moving Hives.* (E. J. G.)—I should, at the present time, have no hesitation in moving them as you purpose doing, but fix the frames by nailing two flat pieces of wood along the ends, and place a piece of small-holed zinc over feeding-hole. With a plentiful supply of straw in the bottom of the van they will travel such a distance nicely. Move them when you like. Three miles is a sufficient distance to prevent them returning to old stand.—W. B. Webster.

[152.] *Moving Hives.*—Having within the last fortnight successfully moved nine bar-frame hives a distance of fourteen miles, my experience may be of assistance to 'E. J. G.' Each hive was wintering on seven frames. I removed the top cushions, and saw that the side cushions kept the dummies snug and firm. Then I tacked a piece of calico on the top of the frames, the tacks fastening in the wood of the stock-box. I used plenty of cabinet-maker's tacks. Two nails kept the moveable floor-boards in their places, and pieces of perforated zinc four inches long were tacked over the flight-holes. When all were thus fixed I piled three in a pile, the super covers of all being removed, and the topmost hive having its roof nailed on with four nails. Thus packed they were put on a light spring van, and the three piles filled it. All reached their destination in safety, and are alive and well, even though six of them had to be kept shut up, as they had travelled for five days, in a dark barn, owing to their roofs having been accidentally left behind. An hour sufficed to untack the temporary covers, draw the nails, and settle all up as they had been in their old home. Of course, such a method of moving could only be adopted in winter. All the hives have fixed legs.—H. W. Lett, M.A.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[157.] *Removing Ticking.*—Would it be advisable before removing the ticking from the top of frames, to smooth it over with a hot iron (just off the burn); it would melt the propolis, and wax, and kill the moth grubs? The ticking would come off easily, and the enamel cloth could be put on at once, without scraping the frames, which generally makes the bees very angry. Would the heat from the iron injure the bees in any way?—J. B.

[158.] As I want some kind of a manipulating house, would a tent of mosquito net, suspended under a tree in the shade, answer the purpose?—T. T.

[159.] *Ligurianising.*—I introduced last August a Ligurian queen to a stock of blacks. I have some forty other stocks, all blacks, and want to Italianise some at least of them. What is my best way to go about it? Having but one stock of Ligurians the breeding will be very close. I suppose the first thing is to insert drone-comb in the middle, and to stimulate. Is it too soon yet? Could I procure and introduce a Ligurian queen at this time of year to a stock? Had I better remove the Italian hive away from the other stocks?—F. P.

[160.] *Bees in Hot-house.*—I have at side of my bees a very long hot-house filled with peach-trees, consequently the bees get in when the trees are out in bloom, and die in enormous quantities. Can any of your readers be so kind as to tell me how to avoid it?—A. P. Barry, *Sumpting.*

[161.] Is not the 'Hill Device,' so much used in America and favourably noticed by A. I. Root, a good thing? and equally or more useful than passages?—J. C. Lambert.

[162.] *The Eyes of the Bee.*—Will any of your readers be so good as to state how many eyes are contained in the compound eye of the worker-bee?—H. S. S.

[163.] *Rate of Flight.*—At what rate does a bee travel? and what is the greatest distance a bee has been known to fly?—H. S. S.

[164.] *Bees Eating Eggs.*—Have bees ever been found eating the eggs of the queen?—H. S. S.

[165.] *Queen-raising.*—Can you inform me if queen-raising can be performed as I propose? By taking a frame of brood in all stages, and placing with one of honey on either side, in a small hive, and placing it on the stand of a stock of bees, after removing them a short distance, would the returning bees, finding their own hive gone, raise a queen from the brood in the frame, or what other method can it be done by?—F. Goldsmith.

[166.] *Transferring, &c.*—When is the best time to transfer bees from skeps to bar-frame hives? I have three stocks in straw skeps which I want to put into bar-frame hives, when would be the best time to put them in? Would it be best to wait until they have swarmed, or can I put them in before? Ought I to put the comb from the skep into the frame-hive?—Young Beginner.

Echoes from the Hives.

Hull.—On Saturday, February 20th, my hives were overhauled to see how supplies lasted. I found a few queenless, and one that had died of starvation, with honey in the hive. Winter passages might have saved them; though punching holes in combs of forty or fifty hives is quite a task.—J. C. Lambert.

South Cornwall, Feb. 27th.—Frost again to-day, but bright sun, so, as bees were moving, I examined some hives at noon and found them strong with good supplies, and some rather too lively. An Abbott's combination hive is in rare good condition as to stores and numbers of healthy bees, but there is no brood. I tried a form of carbolic acid to-day—the disinfecting powder on my garden gloves, but not with satisfactory results. I shall try again.—C. R. S.

Ballinacurry, Co. Cork, Feb. 20th.—Every fine day bees are flying freely, and collecting pollen off snow-drops, aconite, and laurustinus—this latter is not much fancied by bees, for as soon as gorse blossoms, it is abandoned. Berberis Darwinii promises a plentiful and abundant bloom. Each leaf axil shows an orange bunch ready to burst, and cover each bush as if with a shower

of gold; it is in bloom about a month, and crowded with bees while it lasts. I have not seen a queen-wasp as yet, having destroyed every nest about here I could find. I saw a worker-wasp at a hive on the 21st. One ounce cyanide potassium, economically used, is sufficient to destroy fifteen or sixteen wasps' nests.—JOHN J. SMYTH.

World's End, Newbury.—The Ides, the Ides of March remember. To-day we have entered on the third month of '86, and if the advent is any criterion of the subsequent days and weeks, it will prove as memorable in the annals of bee-keepers as the two preceding months. During the whole of January and February, with one solitary exception, my bees have been confined to the hives, that one relaxation from the iron grip of Jack Frost was on Friday, Feb. 11th, and every stock of bees in the apiary was humming a joyful pæan, and taking advantage of the opportunity to survey their new positions. (I have moved my apiary a few yards.) Now, to-day, March 1st, the snow is falling fast, and Boreas is playing high jinks with the fine dry particles of snow as they fall, sending them with pitiless pertinacity into every crevice and corner, and into the entrances of the hives, with force sufficient to carry the small particles of snow to the remotest corner of the interior of the hives. Having an empty hive standing in my apiary, I have proved the truth of the above. I shall attend to every hive at the earliest possible moment, and would advise other bee-keepers to do the same, if they are in any fear as to snow-drift.—W. WOODLEY.

Chester, March 1st, 1886.—March 1st, and a furious gale blowing with blinding snow. February 23rd, visited four apiaries and found all stocks wintered well so far. They do not seem to have consumed quite so much store as usual to this date. Small patches of brood in some instances. Weekly issue of *B. B. J.* is quite to my liking.—CHAS. ROBERTS.

Harborne, Birmingham, Feb. 27.—We have had a severe winter here, and it still continues, there being no sign of any change yet. February 12th was the only day on which the bees flew for two months, and then I believe every bee took advantage of the weather to enjoy a cleansing flight. So great was the number of bees flying, that it reminded one of a July day. Crocuses, snowdrops, &c., are only just above ground, so there has been no pollen collected yet, nevertheless, on opening one of my hives, which I feared was short of food, I was surprised to find a good patch of brood on three frames, and plenty of stores. As an encouragement to dwellers near large towns to keep bees, I may say my best hive last year yielded me sixty pounds of very fine honey.—LORDSWOOD.

LECTURE ON BEE-KEEPING.—On Tuesday evening, February 23rd, at the Mutual Improvement Class, Tunbridge Wells—under the presidency of Mr. H. Holmwood—Mr. F. M. Spaulding read a very interesting paper upon the 'Physiology and anatomy of the honey bee.' Much interest was evinced, as Mr. Spaulding is known to possess a thorough knowledge of the bee, its habits, etc., and has earned for himself a reputation as being an authority on bees, and in the swarming season his services are constantly in requisition. The lecture was very instructive, and Mr. Spaulding received the hearty thanks of the audience.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

TIPP.—The single-comb observatory mentioned has an entrance at end for use as a nucleus hive, in which one may witness the process of queen-hatching, egg-laying, &c. It is found useful for the lecture-room and for conversaziones. It is only for summer use.

C. CHAPPELL.—*Candy.*—The specimen sent will do, only it is rather hard, showing that it has been boiled too much. The pea-flour should have been added when the syrup was of the proper consistency. In your case it had been boiled too long; this caused it to become like coarse brown sugar. Your specimen is also full of holes, showing that the boiling was continued too long.

EBENEZER MCNALLY.—*Quilt.*—The sample of silk sponge cloths would make an excellent substitute for a quilt. Its cheapness would also be a recommendation for its use.

J. SANDER.—*Bees Dying with Abundant Stores.*—The combs are affected with *Bacillus alvei*, but the queen, although not tainted by this disease, was suffering from the form of *torula* which I have now under investigation, and which I first clearly made out rather more than a year ago as the cause of true dysentery. In the absence of the bees, and in the ignorance of the symptoms exhibited, it would be rash to say which ailment brought about the fatal termination. But the combs are so bad that the bacillus not improbably was the most active cause.—F. C.

LINCOLNSHIRE BILL.—1. *Bees.*—The bees sent are black or English bees. No. 3 shows traces of a remote cross with Ligurian or other yellow-banded bees. The drone is one of this year's. 2. *Working without increase of stocks.*—By doubling you can get a larger harvest, but to obtain it you must have a full-sized extractor. You will find it slow work extracting from sections one at a time.

R. WATT.—The bees were crushed flat; but they seem to be blacks, showing traces of yellow blood.

J. J. CHINNICK.—That constitutes a nuisance which is an occasion of trouble to others. The special nuisance that has annoyed your neighbour will probably not occur again.

A. J. RAYMENT.—There is no objection to using with long frames a strip of wood down the middle to facilitate extracting.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
WREN & SON, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

BEE & FRUIT FARMING CO., Limited, St. Mary Cray, Kent.
BRITISH HONEY CO., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

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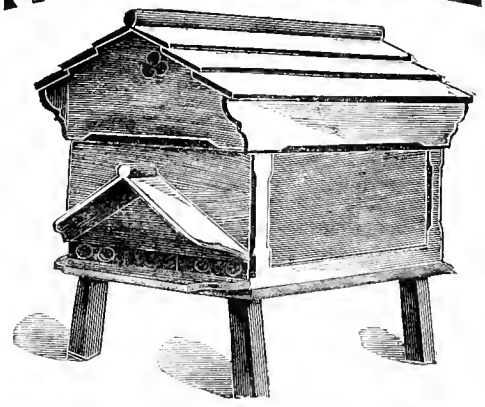

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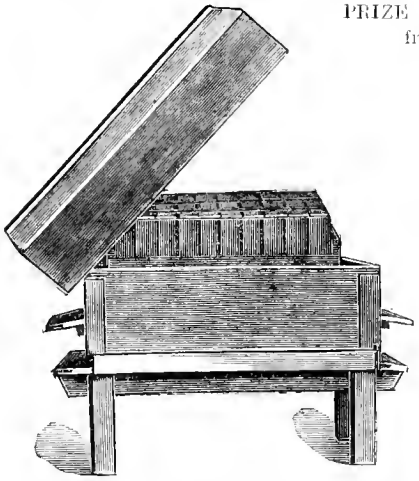

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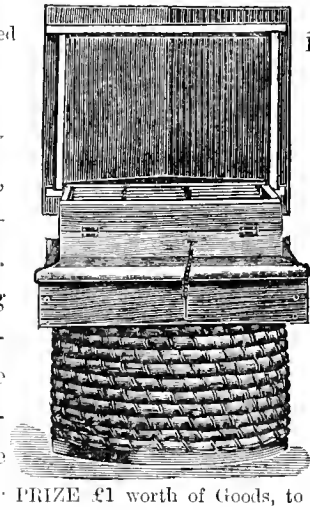

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In order to show the efficiency of E. C. WALTON'S HIVES, and to create a further development of Bee-keeping, E. C. W. has decided to offer the following inducement to intending purchasers. The Prizes are for the largest quantity of Honey, gathered from one of the above Hives in one Season, by fair means, the producer being allowed to work for Comb, or Extracted Honey, but the quantity of Extracted must exceed the Comb by one-third.

Anyone wishing to compete for the above must order their Hives before May 31st, and send in their report before Sept. 31st, 1886.

The winning numbers will be published in the *B. B. Journal.*

E. C. WALTON will be willing to purchase the Honey produced.

E. C. WALTON, Muskham, Newark.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, w.c.

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Editorial, Notices, &c.

THE CENTRAL AND THE COUNTY ASSOCIATIONS.

At the recent general meeting of the British Bee-keepers' Association Mr. Meggy, representative of the Essex Association, proposed an addendum to the motion of Mr. Jesse Garratt to the effect that the Central Association should make grants of money towards the annual exhibitions of the County Associations. The motion was not seconded, and consequently there was no discussion on it. Mr. Meggy, in the course of his remarks, said that 'many bee-keepers were of opinion that little was received in return for the affiliation fee.' To this the Chairman replied that 'this was quite a matter of opinion; the Central Committee knew as a fact that the benefits derived from the County Associations, when they were taken advantage of, cost the Central Society something considerably in excess of the amount paid in affiliation fees.'

Mr. Meggy, we consider, did not, in formulating his motion, take a sufficiently comprehensive view of the work of the Central Society or of the relationship that subsists between it and the County Societies generally.

The Central Society is the heart of the system. Its purpose is to lend efficient aid to counties where a desire has arisen to initiate Associations. Every successive year brings forth some counties where the glimmering flame is to be fanned, and where the weak are to be encouraged and strengthened; and it is pleasing for the Central Society to note that many of those counties where they have sent forth their lecturers, and where they have extended a supporting hand, have now strong, stalwart, self-sustaining Associations, some of them almost equalling the British in numbers. Last year the Central penetrated into North Wales, Cumberland, and the Isle of Man; and this year its attention will be directed towards others.

The Central Society recognise the great fact that their duty is to teach the artizans and the agricultural and labouring classes of this kingdom the most humane and profitable systems of bee-keeping, and they have found that the most successful and the simplest method of accomplishing this object is by the institution of County Associations affiliated with the Central in every county of England and Wales where bee-keeping is possible, and where there is an interest taken in the pursuit. There has been much earnest and uphill work for the Central to have overtaken the task they have set before themselves; but the present aspect of bee-keeping, the numerous societies formed, and the many members rallying round these Associations, are no slight compensation for the labours they have undergone. But this height would not have been gained, this success would not have been achieved, had there been no unity between the Counties and the Central: it is the mutual support cordially and sympathetically given, both advancing foot to foot, and shoulder to shoulder, that has raised the bee-keeping industry to its present position.

This mutual sympathy has received expression from the Counties on several occasions. In 1883 a considerable deficiency arose upon two shows, the Bridgwater and the Knightsbridge, which amounted to 150*l*. A Deficiency Fund was started, and by the general and generous support of all bee-keepers of all classes and from all parts of the kingdom, the debt was extinguished, and the hands of the British set free. Especially would we mention in connexion with this the generosity of the Hampshire in giving 5*l*., the Oxfordshire 2*l*. 2*s*., and others rendering such assistance as they could.

Societies are as they are made use of. There are some, we are aware, who are very hesitant about the payment of the small affiliation fee, who confess themselves dubious as to the advantages of association, and who prefer to revolve in an orbit of their own creation; but when a retrospect is cast on the work accomplished since the starting of the British, and the nature and amount of that work candidly considered and thoughtfully weighed, we feel assured that any assistance the Counties can give, or they may be called upon to render, will be at all times loyally and ungrudgingly accorded.

BEE-KEEPING APPLIANCES.

We desire to acknowledge from C. Redshaw, South Wigston, Leicester, the receipt of several articles useful in the apiary:—1, A spirit-level for levelling hives; 2, a tube for sending samples of honey through the post without further packing; and, 3, a set of assorted labels, in plain colours, in blue and bronzed, and red and gold: these are suitable for jars and sections. The whole of these articles are remarkably cheap, and will be found serviceable to bee-keepers. The labels are very neat and chaste.

GLEANINGS.

In *L'Apiculteur*, speaking of the advantages of large hives, M. Gressier states that he got 317 kilos (about 700 lbs.) this last autumn. His hives are very large, having a capacity of 200 litres (12,200 cubic inches), and a breeding capacity of 140 litres (8140 cubic inches).

In such hives a queen developes her laying capacity to the fullest extent, which gives birth to a large number of workers,—a condition greatly to be desired by the bee-keeper, because, to obtain the maximum of honey it is necessary to have strong colonies which cannot be better obtained than by having large hives. It may be objected that the queen never requires so large a capacity in a hive as 8140 cubic inches to develope her laying powers. This is true, but at the sides of the brood-nest the workers find plenty of room to store honey, and this storage place should never be wanting.

In the *Elsässisch-Lothringische Bienen Züchter* Ch. Zwilling mentions a simple way of getting rid of fertile workers. He takes an empty hive, and between ten and two o'clock (when he is sure to have hardly any other but young bees on the combs—the collectors being out-of-doors) he places a frame from another good hive, containing brood in all stages, with the adhering bees into it. He then places a frame of empty comb by the side of this, and puts this hive into a dark cellar. During the night the young bees finding themselves queenless commence to form queen-cells. The next day, or the day after, this hive is placed on the stand occupied by the one containing the fertile workers, and this last taken away to a distance of about thirty yards from the apiary, and all the bees are brushed out on the grass or on to a large sheet. These will return to the old spot and join the young population. Any trying to enter other hives should be killed, as it is generally among these that the fertile workers are found. The drone brood is then destroyed, and the frames of comb given to the new hive. It is needless to say that if there are any queen-cells available one of them should be given to the young bees instead of making them start a fresh one.

In *Gleanings*, G. M. Doolittle states that it is not an unusual thing for a queen to be kept in her cell for several days after she is ready to emerge, and says that when the queens are thus confined the bees put more wax on to the cells so as to make sure that no harm should befall the occupants from the queen which is at liberty biting through them. They also have a small hole in the end, through which they feed the prisoner. On one occasion he saw a queen issue from a cell whilst the frame was in his hand. He made up a nucleus with it, and the queen commenced to lay on the third day. He has no doubt the queen was six or seven days past maturity when she crawled out, the bees having fed her all the while through a hole in the cell, so that she was as strong and able to fly as the one that went off with the swarm which had issued from this hive. After much experience and many experiments, he states that he can safely say that no queen can fly as soon as she emerges from the cell, where she is allowed to hatch as soon as she is mature.

A. L. Swinton says in *Gleanings* that yellow jessamine honey is considered poisonous by the people of Eastern North Carolina if eaten before it is ripe or capped over. It abounds in the woods in large quantities. He has heard of many instances where people were made sick and partially *blind* from eating unripe jessamine honey; and in consequence of this, the box-hive bee-keepers of that part are very careful to save no honey in the comb—except that capped.

With regard to Holy-Land or Syrian bees, W. S. H. Searey says in *Gleanings* that he regards them as superior to Italians in several respects,—

1. They multiply more rapidly and swarm less. Their colonies are full to overflowing at all times. Although Italians with him are constantly swarming, he has known the Holy-Lands to swarm but once.

2. They never disturb anyone unless they are first disturbed. The Italians are constantly stinging somebody, and he was obliged in self-defence to change them to Holy-lands, and the trouble was over as these attend to their business.

3. They do not dwindle away in the spring like the Italians, but are always strong, healthy, and industrious. There is but one objection to the bees: They require more careful handling than the best strains of Italians.

In *Gleanings* J. W. Burgess says his experience with reversible frames convinces him that there are advantages besides having the comb built to the bottom bar; but he doubts if it pays, or if they will ever come into general use. He finds with eighty colonies and his office work, he has no time to manipulate frames, but feels the necessity of working hives instead of frames.

In the *Bulletin de la Société l'Apiculture d'Alsace-Lorraine*, M. Dennler states that the following five requirements are indispensable for safely wintering bees:—

a. The hive must contain a good queen.

b. It must have a strong population.

c. Sufficient stores to last until the spring.

d. It must be constructed in such a manner as to protect the bees from cold.

e. It must be in a quiet place.

In the *American Bee Journal* a discussion has been going on for some time respecting large *versus* small hives. C. P. Dudant advocates large hives, and says that, although he does not wish it to be understood that each queen will fill every comb of a twelve-frame hive with brood before the honey crop, it is not a good hive unless it allows each queen to exercise her utmost prolificness in producing bees for the honey harvest. The twelve-frame hive allows itself to be contracted for the needs of the queen and of the season, while the eight-frame hive does not allow itself to be widened to suit the prolificness of the queen. Mr. Dudant makes the assertion, which he challenges anyone to disprove, that '*a hive is too small if it does not allow the queen to lay to the utmost of her breeding capacity previous to the honey crop.*'

In the *American Bee Journal* C. Mitchell advocates a space being left below the brood-frames for wintering. He says, as this space is only required in the winter, almost without expense or trouble, when nailing hives together, the entrance can be made 1¼ inches high. For summer the bee-keeper can push in loosely a ⅞-inch board cleated at both ends, which leaves a ⅜-inch entrance the full width of the hive. For wintering the cleated board may be removed, which will then leave about 1½ inches of space below the frames. We suppose it is meant by some means or other to reduce the size of the entrance in winter, but nothing is stated on this point.

In the *American Bee Journal* C. P. Dudant says that a bee-hive and its combs in ordinary circumstances, and with a careful owner, will last at least fifteen seasons. We are ourselves using hives made nearly twenty-five years ago, which are as serviceable now as they were then, and are likely to last many more seasons.

In the *Bee-keepers' Magazine* Rev. L. L. Langstroth speaks of Mr. W. Cary as one of the first and most successful breeders of Italian queens. In 1860 Mr. S. B. Parsons, of Flushing, imported a number of Italian queens with the purpose of breeding and disseminating them over the country. Mr. Langstroth recommended him (Wm. Cary) as the best man for this purpose, as the person who came in charge of most of these bees could not do the work that was expected of him. Mr. Cary's work in Mr. Parsons' apiary fully justified his selection. While the foreigner with the same facilities for breeding queens in a separate apiary established by Mr. Parsons, failed to rear enough even to pay for the black bees and food that he used in his operation, Mr. Cary supplied all the queens needed in Mr. Parsons' apiary and filled all his numerous orders. To appreciate fully the extraordinary success of Mr. Cary as a breeder and shipper of Italian queens, it needs only to be stated that during that year but few queens came alive out of many sent from Europe, and that for years after a large part of the imported queens either died on the way or

arrived in such poor condition that they were of little or no value. Mr. Cary was the first to send a queen across the ocean to this country in a single comb nucleus with a few workers; she was consigned to the late Mr. Woodbury, of Exeter, and reached him in excellent condition.

The *Canadian Bee Journal* states that one of the most remarkable yields of honey ever heard of had been, during last season, gathered at an apiary near Riverside, Cal. The yield from thirty-three colonies was seven and a quarter tons, an average of 414 pounds per colony. Is there not some mistake here? If the average is 414 pounds per colony it would give us 6 tons 1 ewt. 3 qrs. 26 lbs., but 7¼ tons ought to give an average of 492 lbs. per hive.

Selected Query.

[167.]—*Is it more profitable to produce extracted honey, or honey in sections?*

Extracted honey is much more profitable to produce, and working on the doubling principle, double the quantity of extracted honey can be got than section honey, which we understand by comb honey.—EDITOR.

Assuming that equal facilities exist for the disposal of both kinds, and considering the time and expense involved in each system, I am of opinion that, at the present time, there is little to choose between them; but, having regard to the risk to which section honey is exposed in transit, and the greater care necessary at all times in handling, and also bearing in mind the probability of its deterioration through granulation if not early disposed of, I think it highly probable that the extracting system will be found the most practicable.—J. GARRATT.

Honey in sections I consider the most profitable, taking the extra time and trouble of extracting into consideration. —W. WOODLEY.

Experience has satisfied me that a two-fold system of obtaining extracted honey and comb honey from the same hive is the most profitable. This may be accomplished by extracting from the lower hive and piling sections on above, the hive being adapted to the system.—REV. G. RAYNOR.

It is not a question of one or the other being more profitable. To obtain the best results both must be produced in the same apiary.—S. SIMMINS.

Honey in sections.—AMATEUR EXPERT.

The bees will produce about one-fifth more extracted than comb honey.—R. THORPE.

This depends upon locality, whether there is a market for comb honey in the neighbourhood at a fancy price, and upon the skill of the bee-keeper in having the wood of the sections clean and getting them *evenly* filled with honey-comb of uniform colour. Half as much again, if not more, extracted honey in weight can be obtained than comb-honey in sections. The same skill in management is not required for obtaining extracted honey as for first quality sections. I think, all things considered, extracted honey well ripened is the most profitable to produce.—JOHN M. HOOKER.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

The next quarterly meeting of County Representatives and Conversazione will be held on Wednesday, April 28th.

Notices of motion for this meeting must reach the Secretary not later than the 31st of March.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

The fourth annual General Meeting of the Members of this Association was held at Southampton on the 4th inst., at which there were present the Rev. Walter E. Medlicott (chairman), Mrs. Shears, Miss Palmer, Rev. P. P. Izard, Rev. R. Parker, Messrs. J. J. Candey, J. Preedy, H. West, C. Martin, E. H. Bellairs (Hon. Sec.), and others. The minutes of the last General Meeting were confirmed, the usual votes of thanks passed; the reports, balance-sheet, and accounts for 1885, adopted unanimously, and the following gentlemen elected upon the committee for 1886: Revs. W. E. Medlicott, P. P. Izard, R. Parker, A. B. Cotton, T. B. Robinson, H. W. Bull, J. P. Bartlett, Messrs. T. J. Beckford, W. H. Baigent, C. Martin, Jas. Tee, Commander Suckling, R.N., Drs. S. Andrews, T. W. Blake, and Ticehurst.

The report opens with a reference to the well-known glut of the honey-market, and expresses a hope that the difficulty may shortly be overcome by a more general appreciation of the value of honey whether as food or medicine, and successful competition of home-produced honey with the foreign article still so largely imported, adding that there is no reason why England should not in the future export honey instead of importing it.

The report further states that the growth of the Association during the year has been most satisfactory, the number of its members having increased to 291. It is especially encouraging to note that among the new members is a large proportion of cottagers, since the special object of the Association is the encouragement of bee-culture with a view to bettering the condition of the poor. Mr. Davenport, who made the expert's visit for inspection and advice among those members who wished for it in the spring and autumn, reported most favourably on the condition of the various apiaries he visited both with regard to the adoption of new methods and the care with which they are kept, particularly those at St. Denys, Godshill, Marwell Hall, Portsdown Hill, and North, near Hambledon. The apiary at Portsdown Hill interested him most of all. It is located in a disused chalk-pit, rented for the purpose from the War authorities, and he looks forward to the time when many more of our waste places and down-lands shall be utilised in a similar manner. Though satisfied with the progress he witnessed in the methods and style of bee-keeping, he has found here and there among the country people an unreasoning and almost superstitious adherence to old-fashioned ideas on the subject which it requires much energy and patience to overcome. He mentions further with regret that he found a good deal of the nauseous black 'honey-dew' about, and calls attention to the fact that much prejudice is created against the use of honey by the existence and sale of this stuff.

With regard to the propagandist work of the Association by means of shows, it appears that no less than five important exhibitions were held during the summer in the county, in all of which honey and bees had a place, in addition to which there have been various minor occasions utilised for imparting instruction to all who wished for it, by means of public lectures, and encouragement to all by means of prizes, which have been awarded to the value of 65*l*. A handsome marquee has also been acquired by the Association, and has proved of great use in making the exhibitions as effective as possible.

The first show of the year was held in connexion with the Royal Counties Agricultural Society at Southampton on June 23, 24, 25, and 26. There was a good show of honey, and the lectures were a great success. The next event was at Newport, I.W., July 21 and 22, in connexion with the I.W. Agricultural Society (we may notice, by the way, that increased appreciation of the work of the Association has been shown in the Island this year by a marked increase in the number of new members enrolled from among the Islanders).

The annual fair was again held this summer under the auspices of the Royal Horticultural Society of Southampton, Aug. 1 and 3. The Association was enabled, by the liberality of that Society, to award prizes of the value of 23*l*. 10*s*. The silver medal of the B.B.K.A. was

awarded to Mr. H. W. West, of Swanmore, and the bronze medal to F. J. Beckford, Esq., of Winchester, Mrs. Best, of Red Rill, winning the certificate. Here, again, the attendance at the lectures was most encouraging, as was also an event of great interest and significance, the presence of two cottagers earning twelve or fourteen shillings a-week who had cleared respectively 20*l.* and 28*l.* by their bees last year. Then followed the show at Romsey, on Sept. 9, 10, and 11, at which Mr. Baigent replaced Commander Suckling (whose duties have removed him to Folkestone), and Mr. Davenport acted as lecturer in the absence of Mr. Bellairs. The Highcliff Show (Oct. 6) was again a decided success, and especially noteworthy by reason of the increased numbers of cottagers who attended and competed for prizes. Exhibitions and lectures in the bee-tent also took place at Froxfield, Ringwood, I. W. and Milton near Lymington.

Eight members of the H. and I.W.B.K.A. have passed the examination for third-class certificates conferred by the British Bee-keepers' Association.

Touching the question of finance, the Association, owing to the heavy drain upon its resources from the fact of five important exhibitions having been held in the county during last summer, has somewhat lost ground, and the accounts for the year show an overdraft of about 30*l.* The total income (including last year's balance brought forward) amounted to nearly 300*l.*, and the expenditure to 318*l.* 8*s.* 11*d.*, which includes two large items, namely 65*l.* for prizes, and 58*l.* for show expenses.

TORQUAY BRANCH OF THE DEVON AND EXETER BEE-KEEPERS' ASSOCIATION.

The first meeting of the above Society took place on Saturday, January 30th. The following were present: Messrs. E. H. Boord, G. Pullen, W. Brewer, Vail Coombes, R. P. Kitson (member of the Council, D. and E.B.K.A.), Vallance, Davey, Rendall, Edwards, Elliott, Ward, Eastlake, and others. Mr. Kitson was voted to the chair.

The chairman explained that at the annual meeting of the D. and E.B.K.A., held in Exeter January 22nd, it had been decided to form a branch at Torquay, and that he, as a member of the Council, had been requested to form a committee and work it as it was thought best. He then read the rules and privileges of the County Society, and the special rules and privileges of the branch, which will work a district five miles round Torquay, and asked if anyone present would join. Several people responded, and received their tickets of membership. Mr. Boord then addressed the meeting, explaining the advantages of the modern system over the old one.

A discussion on a hive, kindly exhibited by Mr. Vail, followed, and the very successful meeting terminated with a vote of thanks to the chairman.

The second monthly meeting of the above Society took place on Saturday, February 27th, at the same time and place, the Rev. W. B. Davies in the chair. Mr. Kitson explained the plan of getting appliances and the privileges of membership. Mr. Boord read the 'Useful Hints' and extracts from the *Bee Journal*. The chairman started a discussion on spring-feeding and one or two other interesting subjects. The following are the names of the committee:—R. P. Kitson (chairman), W. Winget, W. Brewer, J. Coombes, A. E. Beattie, T. Rendall, G. Vail, S. Vallance, G. F. Pullen, E. H. Boord (hon. sec.)

Any bee-keepers residing within five miles of Torquay who may wish to join the Association can obtain all particulars from the chairman, R. P. Kitson, Collaton, Torquay, or the hon. sec., E. H. Boord, Holmesdale.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

THINGS IN GENERAL, AND SPRING STIMULATION IN PARTICULAR.

[168.] Kindly give a young bee-keeper space to ask a few queries, the solution of which will, I feel sure, be beneficial to many who, like myself, have been recently brought into the business by the County Association, and who are now desirous of increasing their stocks and appliances in the cheapest and best manner possible.

My first query is, Why are two or three sizes of 1-lb. sections used? Last season I ordered a stock of these, and on arrival was disgusted to find they would not fit my section-crate. I thought there was 'Association standard size' for everything, but I was mistaken. My next muddle was getting some spare 'Standard frames' with broad shoulders when my bar-frame hive was fitted with metal ends. Now I want to have all my frames and sections interchangeable, and before buying more I should be glad if some of your readers would advise me which to adopt, and the reasons in favour of either kind; also, are frames with 'saw-slits' best and easiest for fixing foundation?

Last season I used whole sheets of foundation, but in a recent issue of the *B. B. J.* (more power to it!) I find one of your correspondents advocating starters only, as being more economical, and better than whole sheets; and when I think of the swarm I hived in a large skep last year, and the short space of time it took them to fill it with comb, I am inclined to think it a dead loss of four shillings in filling a bar-frame hive with whole sheets of foundation. What do you say?

Last spring I used thirty-six pounds sugar stimulating two stocks from March to end of May; result at end of season, 107½ lbs. honey and seven stocks, one of which, a virgin cast, has died out. And now Mr. Lingen Seager says (and 'Rector' in your issue of the 18th endorses every word), 'I have ceased to believe in spring stimulating, and have found those bees do best that have had a large store of honey left for winter and spring use with plenty of room for natural expansion of brood.' 'Rector' also speaks of 'plenty of combs to move about on if they so list.' Now, sir, if this 'let-'em-alone' system is best, why so much expense and trouble, 'a-sticking everything in the kitchen all for them beas?' And why contract the size of hive in autumn, and carefully spread the brood in spring, 'so necessary to ensure strong stocks in time for the honey flow?' Does Mr. Lingen Seager 'let 'em alone' in these matters as well as in stimulating?'

Another trouble is, Ought I to go in for reversible frames? and another trouble—no, I won't trouble you further. I have already taken up too much of your valuable space. Talk of County Associations being near the end of their work, I think it is only the beginning if that work is, as my county report states, 'to advance bee-keeping, and to afford information to members as to the most profitable manner of managing their bees and disposing of their produce.' I would suggest that instead of carrying the bee tent about the county at a loss to the Association, and instead of enlisting more

recruits, who will only increase the production and consequent depression in the honey trade, that each county should 'advance bee-keeping' by establishing an apiary presided over by the county expert, where experiments could be carried out to prove 'the most profitable manner of managing bees.' Suppose each county undertook to investigate one subject each, the question of 'Things in General, and Spring Stimulation in Particular,' would soon be settled.—NUCLEUS.

[We think it a great pity that there is not a standard size for sections. A year ago the Committee of the British Bee-keepers' Association recommended two sizes for adoption; viz., $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ for 1-lb. and $6\frac{1}{4} \times 5\frac{1}{4} \times 2$ for 2-lbs., as it was found that there were more of these sizes used than all others put together. The matter came before the General Meeting, and the opposition offered to adopting these sizes was so great that the matter fell through. The want of uniformity is certainly a great drawback to their sale, and we should be glad if the Association could decide on a standard size. The Standard frame has no broad shoulders or metal ends, and we never use them ourselves; they are, however, preferred by some, and in ordering frames it should be stated what ends are required. Our reason for not using broad shoulders or anything for keeping the frames at a certain distance apart is, that we can manipulate our hives much more rapidly, also can have the frames at what distance we like from each other; if we wish to restrict the combs to the production of workers only they can be brought closer together, if wanted for honey or otherwise they can be put further apart without any difficulty. We have always found it pay to use whole sheets of foundation, and have had combs drawn out sufficiently to be filled with eggs in twenty-four hours. There are times when it might be more economical to use only starters, and make the bees consume what would otherwise be unsaleable (honey-dew for instance) into comb. When the honey season is late the let-alone system may be well enough, but we should never get any honey at all in our district if we did not stimulate our bees in the spring, and contract the space. No doubt there is a great deal too much meddling with bees and more harm done by injudiciously stimulation and spreading the brood, but we have always found that if properly carried out with care it is marvellous how rapidly a colony can be built up ready for the honey harvest. We have tried both ways and have no hesitation in advocating stimulating in spring, but always recommend caution in not overdoing it. Your suggestion of model apiaries is a very good one, which we should be glad to see carried out.—ED.]

HAS THE BEE-STING EVER BEEN AN OVIPOSITOR?

[169.] Having read with great enjoyment Mr. Grimshaw's most interesting paper in your *Bee Journal* for January 28th, may I ask him to mention one or two instances in which British insects (1) 'have lost the use of their jaws,' (2) 'have had their wing-cases united' after generations of inaction? If the sting of the honey-bee is in a state of transition, has not that of the hornet and wasp arrived at a state of perfection, since they are able to withdraw their dart? Yet how are the circumstances of wasps and hornets altered from what they were hundreds of years ago? and have they ever passed through a transition stage? or was their sting ever used solely as an ovipositor? And why does *A. mellifica* require weapons of defence now more than they did in the days of old? (perhaps to resent the interference of bee-masters with the domestic economy of the community?)

If bee-stings are still in a transition state they are many thousand years behind those of their hornet cousins, who, according to Moses (Ex. xxiii. 28), then used their quasi-ovipositors as 'stings,' as indeed did the bees of Palestine. Whether both, or either, forfeited their lifeblood with their sting we do not know; at any rate both were then able to sting—so now—but one only does it at the cost of its viscera, and therefore of its life.

After 'generations of constant inaction' caused by compulsory 'curtailment,' the sterns of some sheep-dogs are now by nature unadorned at birth with caudal appendages, yet years of docking have not improved the fleecy tails from off the spines of modern sheep. Would it be possible to breed a perfect stinging-bee by selecting a queen of barbless sting?—MAURICE C. H. BIRD, *Abinger Rectory, Dorking.*

PACKING BEES FOR WINTERING.

[170.] I beg to offer my humble protest against the system so much recommended of late years in regard to winter packing; namely, cramming as many bees as possible on as few combs as possible—the said combs being parallel with the entrance to the hive, and also at the back part of the hive, the dummy forming an open court between it and the front of the hive. I am a very old hand myself, and I never saw such miserable failures as this style of wintering seems to cause. I have tried it the last few years in a few instances in my own apiary, and I have seen the very best and strongest stocks (covering seven frames, standard size, in November) hopelessly suffocated through the entrance being choked up with dead bees; and as the present is the proper time to look into this matter, it will be interesting to know what other bee-keepers have to say on so important a subject.

I have always found my stocks winter better without any special packing—except the usual and necessary precaution to keep out wet, and the combs arranged at right angles with the entrance, with plenty of stores and plenty of room, and such stocks I *now* find in excellent condition.—THOMAS F. WARD, *Church House, Highgate, Middlesex.*

SPRING STIMULATION.

[171.] I am glad the Rector of Buckland-Sedleigh is giving us some of his experience on this point. I quite agree with him that we are apt to meddle too much with our bees. Stimulation under certain circumstances is most useful and efficacious, but a wholesale practice of the system is a grand mistake. I have over and over again noticed that stocks that were put well into winter quarters, with a sufficient supply of food, and not meddled much with in the early spring, gave me the best results. For some years past I have had several stocks which were at too great a distance for me to do much with them. I saw them at long periods, doing what was necessary till I could pay them another visit; these proved my most profitable colonies. I advocate manipulating them when it is necessary, and then letting the bees have a chance to work, and not like the child who, a few days after planting seeds, dug them up again to see if they were growing. If Mr. Powell will give us some of his experiences we shall indeed have a treat; his adventures with some of the country people are most amusing, but not many are gifted with the power of relating them as he does.—WM. N. GRIFFIN, *Freshford.*

DRYNESS OF HIVES—QUILTS.

[172.] I have lately seen in the *B. B. J.* several communications on the dryness of hives. Most of the writers attributing the cause to defective roof. I have not noticed that any have blamed the humidity of our atmosphere, although I do not think I should be far wrong in saying that probably that is one of the main causes of dampness of hives.

In reading Mr. Hill's letter, Feb. 25th, p. 140, I noticed that he is wintering some of his bees under a piece of calico, one thickness or more he does not say. I presume from his manner it is only one thickness, and that these seem dryer than some others with thicker covering. Now

taking the average throughout the winter, probably they are much dryer for this reason: the roof of hive has to be pierced to provide for ventilation in order to prevent mould; but it has this ill effect, that it lets in the damp air, which oftentimes is nearly as bad as rain, and from the heat underneath quilt from the bees, there must be a great tendency to condense on quilts, hence damp quilts with a roof either good or bad. Now, if quilts are very thick they must absorb a great deal, and it will be much longer evaporating (when it has the chance) than the thin quilts, hence the advantages of a thin quilt as far as dryness is concerned; but certainly I think that they would be warmer with a thicker covering, provided we can keep it dry.

I have noticed one or more writers recommending, or we will say are using, a kind of oilcloth as a quilt to prevent propolising. As far as I am concerned I should not use it for that purpose. As I have rather a belief that nature generally provides the best means, and that a propolised chamber is better for them than the surface of an oilcloth (I do not wish to discuss it further), but have an idea that the oilcloth, put down nice and close over the calico, face upwards, would have the effect of keeping quilts dry despite humidity of atmosphere, and also would not be a bad safeguard against any possible defect in roof, and any other covering though proper might be placed over that, which might also be covered by a damp resisting surface.—W. J. Green, *Sudbury, Suffolk.*

'EXAMINING EXAMINERS.'

[173.]—I am quite of the same opinion with our Editor in the remarks on this subject in the leading article of Feb. 18th. With the experience I have had (and I feel sure many will agree with me) we are not to be led away with the idea because a man can talk to you a lot about bees that he is fit to be an expert, as when we carefully weigh what he has to say, and then put him to some practical test, he is nowhere; whereas another may not be able to answer some of the questions put to him, yet by a little judgment and quietly drawing him out of himself, we discover that he is a first-class bee-keeper, and well competent to teach others. A certificate of the British Association is a great help to a man, but if held by a novice with plenty of talk and not much practical knowledge much harm is done to the cause.—Wm. N. Griffin, *Feb. 22.*

WARNING TO BEE-KEEPERS.

[174.] As a warning to other bee-keepers I wish to say a few words respecting a certain hive of bees of mine. I may say that the hive in question was attacked with foul brood last spring, and I removed it to a friend's fruit plantation about two miles away from my house, and treated it with Mr. Cheshire's remedy. As the hive being so far away it often got neglected, although I kept a bottle of medicated syrup over the frames. But the bees would not take much from the bottle, so it had to be poured into the combs. No doubt I should have performed this operation every day, but sometimes I could not get there for three or four days together. It took me all the summer to reduce the disease. However, I got them nice and strong, and packed them up for the winter on five standard frames and combs about half filled with honey. I put a 3-lb. cake of phenolated candy on top of frames under quilt to make sure that they would not want before spring. This was done about the middle of September; I did not go near them until the 24th of February. I could see by the appearance of the entrance that the bees had not been about much. It was very cold at the time, but I wanted to see how the inside was, so on opening the hive and removing the chaff cushion I saw that a mouse had been in and eaten a hole through the quilt and into the cushion. I turned up one corner of the quilt, but not a bee was to be seen, and by the appearance of the combs all the bees had been dead for a long time. On turning the quilt further back I saw a large mouse between the combs, so I replaced the quilt and grasped the five combs and two dummies and pressed them together and removed them in a body from the hive and laid them on the ground, and began to shift them about so as to pinch Mr. Mouse. One made his appearance and I pinched him between the frames and killed him; soon his mate appeared and met the same fate. I thought that was the finish of my sport. On shifting the combs a little more a third and a fourth made their appearance and met the same fate. They were four very large fieldmice with long tails and white bellies, the four weighed six ounces. Now, I think they must have entered the hive before they were so large, as I cannot see how they could have got in through the entrance, as it is only $\frac{5}{16}$ of an inch deep, but I had left it four inches the other way. They had built two very nice nests in between the combs, they had eaten all the candy and had about five or six lbs. of honey in the combs. At the bottom of the hive lay a heap of wings and shells of bees mixed up with small fragments of comb and other waste. I cannot but think that the mice killed and ate the bees soon after entering the hive; the appearance of combs and fragments of bee lead me to this conclusion.—A Kentish Bee-keeper, *February 25th.*

HOW BEES FIND THEIR WAY.

[175.] When the extremely delicate organization of the bees is considered, it is surprising that of those subjected to the rough treatment described by Sir J. Lubbock, one-third found their way to their hive. The delicate wings, eyes, antennæ, could scarcely have escaped injury in being whirled round in a bag, so that the experiment cannot be regarded as a fair test. But the question is, How do bees find their way? and can it be doubted that it is by a true mathematical instinct? This may be claimed for them no less than their practical chemistry, converting the produce of flowers into the sweetness of honey, the virulence of the poison bag, the pungency of royal jelly, the elaboration of wax, and no less than their marvellous architectural skill. We see a rush of young bees leaving the hive for the first time, and observe their flight to be full of purpose. It is no heedless, joyous liberty, the business of life is begun. After advancing two or three inches, they turn round, then advance and turn, and so on till the edge of the alighting-board is reached. Then they take wing, but not in a straight direction. The flight is in circles, the radius gradually increasing, and on the return decreasing as the hive is approached. Thus the distance of surrounding objects is measured; and after a few excursions, the position of trees, buildings, hills, in relation to the site of the hive, become landmarks, and unerring guides.

This instinct was curiously illustrated by a queen raised in a skep from worker brood, whose progress was watched with solicitude. I was on the look-out when she was due to leave the hive for the first time. There was the usual rush of workers, and at the instant the queen rose from the board she was struck by a worker and they dropped together about ten or twelve inches and then became disentangled, and the queen rose and flew in circles. But the circles were not measured from the alighting-board, but from the point in the air to which she had fallen, and from which the flying began. Then the radius was reduced, and the puzzle was to find a standpoint—there was only empty space. So the poor queen continued flying, sometimes close to the hive and surrounding bees, but steadfastly returning to the starting centre point. At length she alighted exhausted, and after resting again flew round the vacant space; and this continued till I was satisfied she would be lost without assistance, so raising her on my finger I placed

her at the mouth of the hive. The next day the exit was accomplished without misadventure, the measurements being taken from the alighting-board, and she became a good queen.

It is to be observed that though the bee flies in circles till it becomes acquainted with the locality, when this is learnt it darts off in a straight direction, certain of its bearings. The familiar landmark has been scientifically defined, and in a state of nature the hive never changes its position. When man interposes and moves the habitation, the natural system becomes deranged, the angles are altered, and the instinct is at fault. Therefore, it is advisable, on moving a hive, to attract the attention of the bees to the change before taking flight.

Perhaps we have yet much to learn in the habits, and instinct, and wisdom of our pets. The microscope opens a wide field for research, and adds fascination to the interesting study of the bee.—A.

PRODUCING AND SELLING. [137.]

[176.] I am quite glad to find that 'Amateur Expert' is a 'cousin,' for it will enhance the pleasure with which I always read his contributions to your columns. He has a poor opinion of mine apparently, but they have done good work in drawing just a column of interesting matter from him. If I struck out at all, let it be remembered that it was in the first place at the question of the ripeness of honey, an important condition in its sale. If other things have received blows, it is because they have come in my way; that 'A. E.' says they have is, of course, for the purpose of effective grouping.

Verily some of our 'cousins' are enterprising: to take eleven cows 300 miles from Cornwall, and then to regret not having brought thirty. The wonder is that a person in her position did not send her butter instead of lugging about a basket of it on her arm. Anyhow I am glad she got a sale, and hope equal success will attend the efforts of our country honey-producers. No! I am not in despair either for my own produce or that of my neighbours, but in remote localities the work of disposal is not quite easy, and I do not wish to be urging on cottagers to produce what they cannot sell; and that I too have some experience of work in this direction, if 'Mr. Editor' does not know, 'Mr. Secretary' does.

I am anxious to know what the new rules are that will trouble me. They do not appear in the *B. B. J.*, but will doubtless come into my hands in due time.—South Cornwall.

ANOTHER AMATEUR'S EXPERIENCE.

[177.] Amateur bee-keepers, it is plain, are not too modest to rush into print and give their fellows the benefit of their experience. A very proper spirit, on the whole, and worthy of encouragement. To other beginners it is very encouraging to hear of such good results in the cases of those who, like themselves, are yet in the novitiate. I sometimes wonder at the silence of the unsuccessful ones. Is it possible that there are none? I do really hope that there are a few. The knowledge of the fact would make my non-success less galling. Allow me to tell my tale. I shall be as brief as possible.

Autumn, 1881.—Enthusiasm for bee-keeping created by coming across a bee-keeping work of the bell-glass period. Wrote to one of the advertisers therein for catalogue. Got it. Ordered stock of Ligurians in frame hive. Guide-book ditto (6*d*.). Bees arrived. Couple of combs smashed. Bees gave me a warm reception. Placed hive at window of loft of outhouse. Bees provokingly persisted in dashing themselves against the window, and getting entangled in cobwebs. Removed them to a farm. Didn't feed them. They died.

Autumn, 1882.—Extinguished zeal re-kindled. Drove a couple of stocks of condemned bees very successfully. Placed them in the frame-hive with six frames of foundation. (Had wisely melted the combs of the previous venture.) Fed them niggardly. They died.

I have nothing to record for the two following years. Circumstances forbade me the mortification of passing through my usual trials during this time.

Autumn, 1885.—Drove two stocks. Placed them in hive with strips of foundation remaining from my previous disaster in the frames. A divider between the two stocks, and separate entrances. Two stocks gradually became one. Fed them with syrup first, then with flour-cake and candy. Alive as yet, but not as strong as I wish.

I did not this time confine myself to one lot. I got a 'Copyable' hive and proceeded to get the bees. A friend had two stocks in skeps. He had not touched them for three years. Whether in good condition or not, and whether they had swarmed or not, he didn't know—nor care. My previous successes in driving had made me confident, so I told him with the air of a man who knew what he was talking about that I would relieve him of his bees without trouble. 'Twas a dull day, and the bees were in a dull, shady position. The skeps were overgrown with ivy. My near approach to the skeps was the signal for an uncompromising onslaught on my person by the inhabitants thereof. A quick retreat followed. A newly-acquired smoker was brought into use. Smoke or no smoke, 'twas all the same. Each advance was met with the most unqualifying resistance. But I had come to have those bees, and have them I would whatever the result. I had them. Results of having them,—stings innumerable, followed by swelling all over my body, accompanied by a sensation the most uncomfortable I ever felt.

I wanted more bees in my new hive. Proceeded to the place of another friend the same day, my brother-in-law, who accompanied me, stating his intention of driving the bees. Covered by a veil he made a move towards one of the skeps. Was soon in full retreat, the bees having discovered a flaw in his armour and showing a desire to explore his hair. Went to my brother's rescue and again donned the veil. Bees not to be pacified by any means. We were not to be denied, however. Did battle with our antagonists in turn, until we had secured the bulk of four stocks. Took them home and united with the other two lots. Frames contained only small portions of brood-comb tied by tape, the lot making about 1½ square feet of comb, in eight frames. Fed with about 7 or 8 lbs. of syrup. No sealed food when I fixed them for winter. Gave them at different times flour-cake and candy to the amount of 8 or 9 lbs. Looked at them on 22nd February. Found them in flourishing condition, with a quantity of sealed stores and the amount of comb nearly doubled.

I begin to feel that I am at last on the highroad to success. My hopes and expectations have been considerably raised since I began my subscription to our *Journal* at the beginning of the year. I think it should be impressed upon all intending bee-keepers that a constant perusal of the *Journal* is an indispensable condition to success.—Welsh Novice.

P.S.—I am, it will be seen, very much of a novice, and I hope 'Amateur Expert' and others will bear the fact in mind and keep an even temper when a query or observation should appear above my signature.—W. N.

[154.] *Foundation for Supers.* Corrections.—In second par., 3rd line, read 'previous to the honey *flow*.' Fourth par., 6th line, should read, 'difference between *supplying* supers,' &c. Fifth par., 1st line, for 'question,' read 'quotation.'

Swanmore Bee-keepers' Society and their Lectures.—The Swanmore Branch of the H. and I. W. B. K. A. has thriven so amazingly fast since its formation that a few notes on its success may not be out of place in the pages of

your valuable *Journal*, by way of further inducing additional cottagers in the immediate neighbourhood to commence bee-keeping on modern principles. The committee of the Swanmore Society have arranged a series of lectures, or what may perhaps be better termed a homely chat explanatory on the advantages and disadvantages of using certain kinds of hives and materials in connexion with bee-keeping. The first of these lectures was given on the evening of the 23rd ult. in the schoolroom, Soberton, kindly lent for the occasion by the Rev. J. Morley, who also took the chair on the night in question. Before describing the lecture, it would be better to dot down a few notes on the Society of Swanmore bee-keepers. When the Society was first formed a year ago, it was through the instrumentality of the Rev. W. E. Medlicott, who is an enthusiastic cultivator of bees, and an encourager of all that is good for the interest and benefit of cottagers. A list of officers and a committee was formed, and with such an amount of energy and zeal as was infused into the matter by the Hon. Secretary, Mr. H. W. West, the Society now numbers eighty members. One of the objects of the Society is to raise sufficient funds with which they may hold a large show of honey in the neighbourhood, as it has been found that offering prizes for honey is one of the best incentives for others to commence bee-keeping. Another object which deserves mention is the wish of the Society to assist deserving cottagers with advancing a hive or any other article required. Mr. C. Martin, Swanmore, was the lecturer on the present occasion. He commenced by describing the disadvantages of the old-fashioned straw hive, both as a non-profitable method, and in a pleasurable sense compared to the more modern bar-frame hive, the construction and management of which he detailed in a lucid manner, with the aid of a hive of exeellent make, and by the views on the same subject; Abbott's Copyable Hive was strongly recommended as the one the best adapted for the use of cottagers as a practical, cheap one. The various kinds of bees were next explained, pointing out the uses of the queen, the drones, and the worker bees, the number of bees in a hive, and the time required for hatching the eggs, the reasons of swarming and the best method of hiving a swarm of bees, both in favourable and awkward positions, the time to place the supers on the hives, and the best methods of extracting the honey; by way of example, showing what can be done by careful attention, it was mentioned that one resident of Swanmore had, during the summer of 1885, taken off one hive 110 lbs. of honey; in fact, all matters appertaining to successful bee-keeping were thoroughly and clearly explained, and richly merited the cordial vote of thanks which was unanimously accorded at the close of the lecture, which was very much enhanced by the dissolving views, which conveyed a much clearer idea to the uninitiated than could possibly be without their aid.—E. M. S.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[157.] *Removing Ticking.* (J. B.)—The effect of heat on propolis would be to partially soften it, so that it would adhere more strongly to both ticking and frames, and draw up into strings, requiring more scraping to remove, than if the ticking were stripped off when cold and the propolis brittle. The heat would not be likely to kill the grubs unless sufficient to burn the ticking, but would very likely rouse the bees and make them angry.—F. Lyon.

[157.] *Removing Ticking.* (J.B.)—Remove it in a proper and workmanlike manner, clean the frames with a scraper; by your method you would simply remove it from the tops, and stick it on the edges of frames, the quilt being fixed down firmer than the bees fixed it. If your iron is hot enough to kill the moth larvæ, surely it will be hot enough to injure the delicate antennæ of the bees, when they come up to feel what all the noise is about.—W. B. Webster.

[157.] *Removing Ticking.* (J. B.)—The heat would excite the bees. If done on a warm day I see no objection. Try one hive as an experiment.—Amateur Expert.

[158.] *House of Mosquito Net.* (T. T.)—I have long thought of a portable tent of net or wire cloth, to drop over the hive and oneself while manipulating, not for myself, but for very nervous manipulators. I should prefer that to one under a tree in the shade. A good preventive from robbing for the time being.—Amateur Expert.

[158.] *Manipulating Tent.* (T. T.)—A tent, similar to your description, is frequently used to manipulate in during cessation of honey flows. It is made portable, and of sufficient size to cover over the hive and manipulator.—W. B. Webster.

[159.] *Ligurianising.* (F. P.)—You will get full instructions in many bee-books. A proper answer would take a couple of columns of the *Journal*. Cheshire's *Practical Bee-keeping*, 1*s.* 6*d.*, will give it you fully. Is the game worth the candle? You are almost certain to get several young queens fertilised by Italian drones without any effort of yours.—Amateur Expert.

[159.] *Ligurianising.* (F. P.)—It is imposible to keep all your stocks pure without a regular system of queen-rearing; this is most easily done by means of nuclei, a description of which would occupy two or three pages of this *Journal*. Read *British Bee-keepers' Guide*, by Cowan, 1*s.* 8*d.*, post free, Alleyn on *Queen Rearing*, Root's *A B C of Bee Culture*, &c. You will require at least two stocks of Ligurians, the one with selected drones will have to be kept near nuclei, at least half a mile from any hive stocked with bees of other varieties. It is too early yet to stimulate, stimulate first, introduce drone comb when stocks are strong. It is much too cold now to purchase queens, even if you could find any one to sell, they would be injured in transit. Purchase a stock.—W. B. Webster.

[160.] *Bees in Hot-house.* (A. P. Barry.)—The bees are excellent fertilizers of the peach blooms. Which is of most value to you, the bees or the peaches? Mosquito net will exclude them.—Amateur Expert.

[160.] *Bees in Hot-house.* (A. P. Barry.)—You cannot avoid it entirely; by keeping the windows open during sunny weather, the bees—after a time—find their way in and out. The dead bees are those that have worried themselves against the glass in their fruitless endeavours to get back to their hives.—W. B. Webster.

[160.]—*Bees in Hothouse.*—The only way I know is to provide an easy exit near the head of the front sashes where the bees always collect when they try to return home. My plan is to cut a piece of the last pane of the top glass and insert a zinc slide, which can easily be opened in fine weather. If this is done about every fourth pane the bees will all draw out. I have a range of orchard house fitted in this way, and find it work very well. Another plan is to groove the head before glazing; but I find the zinc slide works best.—Archibald Seth Smith.

[161.] *Hill Device.* (J. C. Lambert.)—Some of my hives I have so fitted this winter, but do not consider it so good as winter passages; there must be a greater escape of heat, especially when the hive has become depopulated, and the outside frames tenantless. With winter passages cut through the combs, the cluster of bees covering the passages, prevent any very considerable escape; it is also much easier for the bees to gradually draw through to the next frame, as the hole is about the middle of the cluster.—W. B. Webster.

[162.] *The Eyes of the Bee.* (H. S. S.)—Mr. Cheshire—than whom no higher authority exists—gives the number of facets or simple eyes contained in one compound eye of the worker bee, at 6300, of a drone 13,090, and a mother bee 4920.—W. B. Webster.

[161.] *Bees Eating Eggs.* (H. S. S.)—Yes, frequently, when laid improperly, such as dropped on floor-board. I had a number of eggs disappear from a comb at the end of the season, where they went to I did not see, but the fact of bees being addicted to this habit led me to infer that they had made a meal of them.—W. B. Webster.

[165.] *Queen Raising.* (F. Goldsmith.)—Do not think of doing such a thing, it is imperative that you have young bees, and plenty of them, to feed larvæ; under your management you would only have old ones. See answer to (159.)—W. B. Webster.

[165.] *Queen Raising.* (F. Goldsmith.)—They would

probably, but you would deprive the nucleus hive of its natural nurses by this method, and the stock of its gatherers and warriors. Mr. Blow's article will give you some good hints.—AMATEUR EXPERT.

[165.] *Queen Raising.* (F. Goldsmith)—Queens can be raised as you propose, but why proceed thus? A better plan would be to introduce into the centre of the brood-nest a frame of comb or foundation, preferably the former, first marking the frame with lead-pencil. In three days remove to fresh hive, having satisfied yourself that it contains the desired eggs, and treat as you propose. Of course you would cut away a portion of comb beneath the eggs, and it would be well to feed gently to induce cell-building. —PLATELAYER.

[166.] *Transferring, &c.* (Young Beginner.)—If you want increase of stocks, let them swarm, and hive the swarms in bar-frame hives on foundation, and later on, after the young queens are well established in the skeps, you may transfer combs and bees into bar-frames without danger to brood, the weather being warm, or you may transfer combs and bees on a fine day in April, and the shift would act as a strong stimulant, and if well fed and cared for they would probably give you good returns. If you adopt this latter method you must not hope for increase, but honey.—AMATEUR EXPERT.

[166.] *Transferring.* (Young Beginner.)—They can be transferred before swarming, but as your *nom de plume* implies inexperience, wait until they swarm, and three weeks after transfer; use all the worker comb in filling frames, reject drone comb, and any very old.—W. B. WEBSTER.

[166.] *Transferring.* (Young Beginner.)—You may transfer at any time when the weather is warm enough for manipulation. Be careful not to chill the brood. Bump the skep to break out the combs, and leave the bees in it. Take out the middle comb, brush the bees off it into the skep, tie it into a frame and hang it in the frame-hive. Brush the bees off the other combs as you lift them out one at a time, on to the comb or combs in the frame-hive. By this plan, the brood and bees will be separated for but a short time. Tie all the worker comb into the frames, but discard drone comb. Fill the frames from side to side with comb piecing, if necessary. When all are tied in, brush out the remaining bees from the skep on to the combs, close up the divider, and cover up warmly. Put all comb cuttings containing honey behind the back divider, giving access to them to the bees of the hive, but carefully excluding strangers.—F. LYON.

[We much regret that the valuable replies forwarded by Mr. J. Walton and Mr. J. Saddler reached us too late for their insertion in last week's issue. We should be obliged by those correspondents who favour us with replies being prompt and succinct.—ED.]

Queries.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[178.]—How can you tell from which hive a swarm or cast has issued if in one's absence, to enable it to be re-united to the parent stock if required?—W. G. E.

[179.]—*Sealing Wax.*—Could you inform me how to make sealing wax?—TYRO.

[180.]—*Kohler System.*—Is it practicable, and am I likely to be successful, in getting young queens in nuclei fertilised on the Kohler system, viz., putting them in a cellar and bringing them out to their stands in the evening?—TYRO.

[181.]—Is it possible in packing up stocks of bees in autumn to overdo it? On examining a stock on March 4th, to my surprise I found brood in four frames, and not a cell with honey, bees eating the grubs and dying for want of food. Now this stock at end of October had over 20 lbs. of honey, bees crowded on nine frames with calico quilt, piece of felt carpet, four thicknesses of hop-pocketing, besides two sacks folded to eight thick on top, and bars to back of hive, dummy in front.—J. H.

[182.] *In a dilemma.*—Should I be satisfied? I commenced bee-keeping in 1883. Expenditure to present time is 35*l.*, receipts, 26*l.*; stock-in-hand, twelve bar-framed hives (cost 8*l.*), ten with stock of bees, extractor (Blow's), and sundries, over 200 pounds of honey (some sections), sold this year for sixpence. 2. Placing two or more crates of sections, I noticed in the *British Bee Journal* constantly recommended. My difficulty is, that the covers of my hives have only room for one crate. What should I do? I had a hive made to my order which covers two crates, and that did fairly well last year.—A. P. J.

Echoes from the Hives.

Chester.—Weather since the 1st inst. has been intensely cold, with heavy falls of snow. Bees have been tempted out one or two days when the sun has been bright. Expect this is a critical time for many stocks. Am convinced that wintering at the back of hive is the best; two of my stocks treated so have lost very few bees.—CHARLES ROBERTS.

North Leicestershire.—Bees were in flight on the 20th ult., and had a 'little go' at the aconites. Since then they have been snowed up. On Sunday, 7th inst., the thermometer ranged from 17° to 35° Fahr., but the sun was so bright and warm that the bees, in spite of shading, came out to perish by the hundreds. During the middle of the day very few fatalities occurred, but later in the afternoon the bees were unable to rise again after once floundering in the snow. Stocks in large numbers must soon perish if this cold weather continues.—E. B.

Weston, Leamington, March 2nd.—A little over a fortnight ago the bees had a good flight on two days; since then the weather has been very severe for the time of year, March being ushered in yesterday by a terrible snow-storm. I had to put bits of flannel in the entrances to keep the snow (which was like fine dust) from blowing in. All vegetation is very backward, scarcely a sign of the buds moving yet.—JOHN WALTON.

Mousehill, Surrey.—Packed last autumn a nucleus colony of two frames of honey (the hive would not hold more, as I made it especially for two frames). Examined to-day, February 26th, and found the bees in a healthy condition, and sealed brood on the outside of one frame. Found the food was getting rather low, so gave them a good dose of moist sugar on the top of frames, which they soon began to work at. The hive is packed in warm material in a bee-house.—W. EDWARDS.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

W. NOAKE.—The two experts of Staffordshire are Mr. A. W. Rollins, of Stourbridge, and Mr. E. Clowes, of Milton, near Stone, who, according to their opportunity, will be pleased to give you the information you seek respecting your bees. You may begin to stimulate your bees about six weeks before the appearance of the apple-blossoms.

MONTGOMERYSHIRE.—*Zinc Covers.*—There is no objection to zinc covers either for winter or summer use. In summer they rather attract the heat; but that disadvantage may be reduced by painting them. If you would look over the trade catalogues of Messrs. Abbott, Harrison, Neighbour, and others, you would see that considerable attention has been given to render these covers ornamental.

M. C. H.—*Management.*—If your honey season does not come until the middle of June, there is ample time for your bees to complete the combs if they are fed gently, commencing in April, provided they have sufficient food to last them to that time. You should remove some of

the frames and reduce the space occupied by the bees, and let them complete some of the combs and gradually add the others as they require more room.

C. N. W.—The sample of sugar forwarded is either Porto Rico or Barbadoes, and is of excellent flavour.

Uncle Tom.—Your letter has been forwarded to 'A. E., whom it alone concerns; his reply is, 'Drone "wasps" make a noise, but they have no sting.'

J. B. S.—1. *Moving Hives a few feet.*—You can move your bees only on those days when the bees are able to fly. We should recommend you to begin at one end of your bench and move the first hive a couple of feet, and the next one a foot, and the next a few inches, and gradually spread them out in this way until you have got them as far apart as required. If you move them forward you can take three feet at a time. 2. *Dysentery.*—You had better wait until the weather is a little warmer, and then change the floor-boards and feed with warm syrup. 3. P. H. Phillips, Esq., Crowborough, is acting as secretary of the Sussex Association.

R. J. S. *Caran. — Cowan's Practical Note Book.* — Your entries in Table 10 are quite correct, only you could with advantage enter more details,—for instance, under the heading 'Condition of Bees,' you might say how many frames they covered and how many frames you had in the hive. 'Quantity of Brood,' you might say how many frames had brood and what quantity on each, also the superficial area of 'Food remaining' on a valuation of the weight. Table 2 should be discontinued as soon as you have taken your bees out of winter quarters, and begin to work them up, to which time Table I would be in use. It is merely a record of the weather, and the 'Observations made on Individual Stocks,' should state if the bees are active or quiet, or if they are bringing in pollen, &c. Table 8 is to record the quantity of food given to each stock during the year. You can judge of the principal flowers by observing what you have most of in the neighbourhood and which are most frequented by the bees, such as clover, limes, tares, &c.

W. C. Thomas —*Sending Stocks of Bees to the West Indies.* —Have all the combs well fixed in the frames with wire, and see that the frames are secure to the hive so as not to shake about. The older and tougher the combs are the better, and they should contain a good proportion of sealed honey. If short of this, a frame of candy sugar should be inserted; but as the voyage is generally under twenty days, the supply of food need not be very large. It is essential that the bees have access to a little water. This may be given them by means of a moistened sponge at *the side*. The sponge should be damped about every other day. A piece of perforated zinc being fixed on the inside against an inch hole, through which the water may be taken. The hive should be ventilated by having a false roof of perforated zinc with a board above, raised about three quarters of an inch and screwed down. The amount of ventilation depends on the time of year and the number of bees,—a few holes at the side are sometimes useful, of course covered with perforated zinc. The hive should be kept in the dark, if possible and where there is air, but not too strong a current or otherwise exposed to the weather.

W. C. J.—*Breed of Bees.*—The bees which you send are hybrids, a first cross between blacks and a yellow race. According to the observation of a recent correspondent, black crossed with yellow are more irritable than yellow bees crossed with black.

Melilotus.—1. *Uniting Bees in Hives with Non-interchangeable Frames.*—Brush the bees off the combs of each hive to be united into a separate skep. Turn one lot into the other and mix them up by shaking them about, leave them for a short time to form a cluster, and then turn the whole among the combs of the hive which had the queen. 2. *Uniting Skeps to Frame-hive.*—Transfer such combs from the skeps as contain brood to frames, turn the bees among them, and when settled down place the frames of comb alternately with those of the other hive—previously picking out the queen which you value least.

D.—*Disinfecting Hives and room which have had foul-broody bees in them.*—Thoroughly wash the hives inside and out with a strong solution of carbolic acid. The room, if of boards or brick, should be lime-whited, adding half a pint of carbolic acid to each pail-ful of lime-white. If this is not practicable spray the walls and floor all over with solution of carbolic acid.

E. M. C.—*Feeders.*—The caps of feeders are usually made of tin. The stages may be of tin or zinc as preferred. Two holes will be sufficient for stimulation.

Nil Desperandum. — *Hives, Position, &c.*—1. We do not recommend you to place your hives in the stable-loft, as you propose, with a northern aspect, and sheltered by yew-trees. Bees would not prosper in such a situation. A south or south-easterly aspect, and hives on single stands, are best. For such, according to your sketch, there is plenty of room on the lawn, running in a westerly direction 200 yards, without causing annoyance to any one, if rightly placed; at least, so we are inclined to think, not having *seen* the site. 2. As regards the kind of hive, the simplest are the best, only be careful to use the standard *frame*. For a garden, a plain hive, containing twelve frames with roof and stand, are all you require, and such, a really sound article, may be obtained for about 15*s*. A much cheaper hive would answer for a loft, since neither roof nor stand would be required. If you utilise the loft, place your hives on the south side, and cut a separate entrance for each through the wall, so as to exclude the bees from the interior of the loft. Thus, when manipulating, the bees taking flight might be allowed to escape through the open window. No annoyance could arise to neighbours except from the occasional settling of a swarm in an adjoining garden. We cannot undertake to recommend any particular hive further than stated above, but refer you to our advertising columns where you will find plenty of choice of good, plain, inexpensive hives advertised. As a beginner, avoid all complicated ones.

Black Bee.—1. We are not able to say whether section or extracted honey will be in most demand during the coming season. But we would suggest that you should work for both kinds. There is less labour in getting section honey; but a greater quantity may be obtained by extracting. (See replies to Selected Query in this number.) 2. From the numerous testimonies which we possess of the superiority of hybrid bees in honey-gathering, and as your object in keeping bees is the acquisition of honey, we do not advise that you should make the change you suggest.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

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Editorial, Notices, &c.

CHOOSING COMMITTEES.

From the earliest times of the world's history mankind has been striving to attain the ideal form of government. The rule of the one, the few, and the many, have alike met with varied success and failure, and the conclusion of the whole matter seems to be that the best form of government is that exercised by a despot and—an angel. There is no difficulty in finding men endowed with the former characteristic. All of us, or at least nearly all of us, love power, though we may show it in different ways; but the angelic characteristic is an unknown quantity, and as a result we are obliged to resort to the government by the few or the many. As it would be nearly impossible to manage any business by having to refer every petty detail to the consideration and vote of every individual, the system of representation has been followed, by which the general body depute their power to certain of their number; and so long as the latter keep touch with their supporters, and carry out their wishes, so long do they remain in office. In our Association the business is managed by certain officers and a committee of fifteen members, all of whom retire every year, but are eligible for re-election.

At the general meeting various plans were proposed to ensure the election of the best possible committee, but no definite alteration of the existing plan of election was agreed upon. We venture to think that improvement is wanted and could be effected. At the present time the general body of electors know little or nothing about many of the candidates, and many vote for the old members so long as they have no reason of complaint against the general policy of the committee in the past. It would be invidious to influence the electors by advising them to choose certain candidates, but we think it would be only fair to publish the attendances of the members of the committee during the past year some time before the election, and that only those of the old members who had regularly attended the meetings should be eligible for re-election, unless they had some valid excuse to offer. Again, it might possibly happen that some of the new candidates might not be acceptable to some of the members. For instance, some members might know that a certain candidate had sold foreign honey as pure English honey. Unless those members took the trouble of writing numerous 'private and confidential' letters to the other members, this candidate might get elected through other members not knowing what he had done It would be advisable that there should be the power of black-balling such a one, just as is the case in club elections, and as this power would not be exercised unless there were sufficient reasons, it would be a safeguard against the election of any undesirable member.

We can praise as much as we like, but we have to be very careful how we blame any one, even though righteously, and the power of black-balling would prevent any unsuitable candidate from being proposed as a member of the committee.

Mr. Stewart's proposition to elect ten members, and then let these ten nominate another ten, out of whom five should be elected, would be taking away, to a certain extent, the popular representation.

All representative bodies are naturally jealous of their committee having too much despotic power. It might happen that the first unsuccessful candidate might not be nominated by the ten, though there was nothing against his moral (bee) character, and if such a case were to happen, it should be open to any one to propose any or all of the unsuccessful candidates.

LECTURES ON APICULTURE.

The following course of lectures will be delivered by Mr. Frank Cheshire at Jermyn Street Museum, Jermyn Street :—

March	17—	The Bee at	Home ..	Economy.
,,	18—	,,	Abroad ..	Fertilisation.
,,	19—	,,	a Structure ..	Anatomy and Physiology.
,,	24—	,,	at Work ..	Comb-building, Honey and Wax.
,,	25—	,,	under Management ...	Swarming, Queen-raising, &c.
,,	26—	,,	a Source of Profit ..	Honey raising, &c., &c.

USEFUL HINTS.

Since our last we have no better weather report on which to congratulate our readers. Snow-storms—trains and passengers entombed for two or three days—hitter, black frost, and biting winds, ice four inches thick in Kensington Gardens, &c. Such are the reports from all quarters, and our poor bees are at present close prisoners. An old bachelor friend suggests that the 'clerk-of-the-weather' cannot be alone guilty of such atrocities, and very much suspects his wife of the greater part of the mischief! But this view we con-

sider most ungallant, to say the least. Although we have experienced a few bright, sunny days, there has been no day warm enough to encourage a thorough cleansing flight, and we fear to many a colony such a day will come too late. 'Hope on, hope ever,' must be our motto.

Manipulation.—*When* the weather changes examine hives—in the evening, preferably, to avoid inciting to robbing. Half-a-dozen may be well examined in an hour. Where foul with dysentery remove the cluster, on its four or five frames without separation, to a clean, dry hive, which should be in readiness. Supply clean floor-boards, and cover up warmly. If short of food, give warm syrup, and feed at evening. Disinfect foul hives and frames—spraying, syringing, scrubbing with strong carbolic solution—afterwards thoroughly drying them—by fire if necessary—when they will be ready, by the next evening, to receive transfers from other hives. Our own plan is to give *every* colony about this time a clean, dry, disinfected hive.

While manipulating, separate the brood-nest as little as possible. Be anxious only to ascertain (*a*), that the queen is breeding; (*b*), that the colony has sufficient food to carry it over the next two or three weeks; (*c*), that there is no disease, or fouling of the hive.

Frame Coverings.—Supply enamel-cloth covers, enamel side downwards, upon the frames: upon these, quilts of felt or carpet, and, finally, a crown-board, slightly weighted, to hold all tight together. Flat straw crown-boards are best.

Pollen.—Within a few hundred yards of our apiary is an old-fashioned windmill, on visiting which, on a bright day of March, we noticed numerous of our bees, with busy hum, collecting and piling on their legs the farina, or meal-dust, lodged upon the weather-boarding of the mill. The miller informed us that every year, during the early spring, he had plenty of these visitors. This fact indicates the necessity of a supply of artificial pollen—wheat, rye, or pea meal, nearer home. Therefore, in a sheltered nook in our apiary, where Sol's rays have ready access, we place sundry hives with frames of comb which have been previously dredged with flour. On a bright day a frame of honey unsealed, placed in the vicinity, soon announces the fact to all colonies. Near by are shallow troughs of water, which are constantly replenished, and a handful of salt is sprinkled over the surface, which is covered by thin perforated boards to prevent drowning. Here the bees regale themselves, and carry home hence, in large quantities, the pabulum for their offspring. In a late cold spring, like the present, when little or no pollen is to be obtained from the fields and gardens, such supplies are of great value in encouraging breeding and bringing up colonies to full profit point by the time the honey flow sets in. Some argue that a sufficient supply of last year's pollen is always present in the hives, but experience teaches that little use is made of this, since, dry or mouldy, it is usually cast out in hardened pellets from the hives.

Spring Dwindling and Absconding Colonies often occur simultaneously. There may be, therefore, some connexion between the two. The causes usually assigned for colonies absconding in the early spring are (*a*), want of food; (*b*), some dislike taken to the hive; (*c*), a failing, injured, or unfertile queen. To these we add a reduced population, whether arising from spring dwindling, dysentery, or other cause. Instinctively the bees seem to become aware that the small handful of population remaining, however well provisioned, are powerless to produce sufficient progeny for building up a strong and successful colony. Hence they desert in a body on some fine day, and, clustering as a swarm, if not secured, wandering from bough to bough, finally enter a neighbouring hive, where they are slaughtered without mercy. We have often returned the vagrants to their deserted hive, but never knew them to remain, even when good and wholesome honey was there in abundance. It is probable that a comb of brood might retain them, but this we have not tried. Mr. A. I. Root assigns another cause. After stating that, at times, a whole apiary will become so crazed with the idea of absconding as to be utterly demoralised, he relates a story of a neighbour who made a hobby of small hives—less than half the usual size—who, one fine April day (we have a fancy that it must have been on the first of the month) 'had as many as forty colonies leave their hives and cluster together in all sorts of promiscuous combinations.' He does not attribute this dire misfortune entirely to the small hives, but, from the advice he gives in the succeeding paragraph, and which we heartily endorse, to a variety of causes: (1.) Do not divide, or commence swarming your bees until they are abundantly strong. (2.) Put them into winter quarters with an abundance of sealed honey in tough old combs. (3.) Keep them in hives with walls thick and warm of some porous material, such as chaff or straw, with a good thickness of the same above, and you will have little cause to complain of bees absconding in the spring. The queen, we believe, is usually the motive cause of absconding. After returning the wanderers, we have repeatedly seen her desert the combs and lead out the swarm anew. We have caged her, but on being released she has again deserted. In fact the colony has seemed utterly disheartened and demoralised, in which case the only thing to be done is to unite to another. As a rule the only cure for spring dwindling—as for dysentery—is warm and bright weather. *Di sint faciles.*

Doubling.—We have often been asked, even at this early period, if it was not time to begin doubling. Such querists we beg to refer to Mr. Cowan's *Guide*, p. 155, where, under the heading 'Summer,' he directs us to double those colonies intended for extracting, and to extract at suitable intervals. We can only remark, *very feelingly*, that summer has not yet come. Mr. Cowan's instructions for working on the doubling system are given concisely, but very clearly, in his book, p. 55, and cannot well be improved. Our belief is that section-honey will pay as well as extracted, if obtained in *proper form* and on a good system. Except at our best shows, and perhaps in Mr. Neighbour's window in Regent Street, we never see a *first-class* section. This we know, that where we are asked for one pound of extracted honey, we find ready sale for half a dozen 1-lb. sections at double the price.

Robbing.—When the cold weather departs and the bees begin to fly in full force, a watchful eye must be kept on weak colonies and their stronger neighbours, since it is just at such a time that robbing begins, especially when forage is scarce. A remedy which used to be in vogue we have not seen recommended, viz., to stop up the entrance with dry earth, which prevents the entry of the raiders for the time, and is soon cleared away by the imprisoned bees. It seems to be worth a trial. Rubbing an onion over the alighting-board, and continual application of carbolic acid are also considered remedies.

Combs.—When colonies have unfortunately perished, let the combs be thoroughly cleansed of dead bees, sprayed with carbolic acid solution, and stored in a dry room after being exposed to the air and dried. Look after them occasionally to see that moth does not attack them until wanted for swarms, doubling, &c. Mr. Root speaks of having put into hives, when honey was coming in, combs that were full of dead bees, filthy from the effects of dysentery, and mouldy besides, and has found them in the afternoon of the same day clean, bright, and sweet, holes patched, and partly filled with eggs, honey, and pollen.

After the very interesting paper by 'Nucleus,' in

our last issue, under the title of 'Things-in-general,' &c., we forego our remarks under the same heading for this time.

CORRIGENDA IN LAST 'HINTS.'—Page 90, col. 1, line 20 from bottom, read:—'Go to each colony and look it over, clipping the queen's wing, and equalising stores, so that each may have enough to carry it on at least two weeks without starvation.' Also at page 91, col. 1, line 36 from bottom, read:—'The climate he terms "sickly and hot," but speaks of it as splendid for honey, and mentions that there are wild bees everywhere,' &c., &c.

ASSOCIATIONS.

NORTH-EAST OF IRELAND BEE-KEEPERS' ASSOCIATION ANNUAL REPORT.

In presenting their second Annual Report your Committee feel that they may congratulate you on the success that has attended efforts put forward during the year in extending the knowledge of bee-culture. They regret, however, that more bee-keepers have not joined their ranks, feeling that strength means success; and as their means are small they cannot yet attempt such things as they would like, but hope in the future to bring bee-keeping more prominently before the agricultural labourers, so that when they get their three acres and a cow they may be induced to get another sort of a cow that will produce honey. The bee-tent of the society has been sent during the year to Banbridge and Castlerock, and there is every reason to believe that some who at these places saw the practical working of hives, will be induced to commence bee-keeping and become members of the society. The annual show at Belfast was a great success. There was a larger quantity and finer assortment of bees, honey, and bee-keeping appliances exhibited than has ever yet been placed before the public of the North of Ireland. The Treasurer's balance-sheet shows, we are glad to say, a balance on the creditor's side of 11*l.* 7*s.*, which we consider excellent. The committee wish to offer their best thanks to the gentlemen who so kindly gave medals and prizes to be competed for at the show, and also the press for the able way in which the claims and the working of the society were set before the public.

Fifty members of the N.E.I.B.K.A. who sent in returns of bees and honey have, in 1885,

284	bar-framed hives of	common	bees
58	,,	,,	hybrid
12	,,	,,	Ligurian
70	other hives, straw skeps, &c.,		common
1	,,	,,	,, hybrid
425			

and the total quantity of honey taken from the above was 8990 lbs. The largest taken from any one hive was 121 lbs., and the next three 118 lbs., 104 lbs., 98 lbs., respectively.

At the general meeting the following resolutions were passed. Mr. Hamilton M'Cleery having tendered his resignation as hon. sec., Mr. Morris moved, and Mr. M'Henry seconded—'That the best thanks of the society be given to Mr. M'Cleery for his exertions during the past two years on behalf of the Association, that much of the success it has obtained is due to him, and that they are sorry he could not see his way clear to continue to act for them.'

Proposed by Mr. M'Cleery and seconded by Mr. Cunningham—'That Messrs. A. Crawford and P. M'Henry be appointed hon. secs. for the coming year.'

Mr. M'Henry, in forwarding the above report, writes:—'I am pleased to inform you the knowledge of humane bee-keeping is being largely diffused, and the N.E.I.B.K.A. hope to extend this knowledge much more, having had a considerable addition to their membership since report was issued, and hope the year 1886 will be a successful one for the fraternity in general. I am much pleased with the weekly *Journal*.'

BELFAST NATURALISTS' FIELD CLUB.

The fourth meeting of the session was held in the Museum, College Square, on Tuesday evening, February 16th, the president (Rev. Canon Grainger, D.D., M.R.I.A) in the chair, when two communications were brought forward. The first was by the Rev. John Andrews, on 'The British Bees.' Mr. Andrews's paper was well illustrated by a series of specimens beautifully mounted on cards, and of parts of the various species set up for microscopic examination.

The second paper was read by the Rev. H. W. Lett, M.A., T.C.D., on 'The Races of the Honey Bee.' The reader stated that no other insect has so much attracted in all ages the attention of naturalists in temperate regions as the honey bee—*Apis mellifica*—and there is none which has such an extensive literature of its own. People that know nothing about bees beyond the shape of a straw skep or hive, the taste of their honey, and the effect of their stings, would be greatly surprised at first reading any of the numerous articles that appear from time to time in the journals and periodicals devoted to bee-culture on the improvement of the race of honey gatherers, for just as the English breed of shorthorns has been developed by the care bestowed on the selection of the best stock from which to rear calves, so have bee-keepers, especially the Americans, been carefully selecting the parents of the future honey bee. The necessary qualities, according to authorities in bee-culture, are—1st, hardiness—able to bear bad winter weather without diminishing too much; 2nd, good breeders, the queen laying early and abundantly; 3rd, being gentle and quiet, not attacking without provocation, and allowing themselves to be examined when the combs and bar-frames are lifted out of the hives for that purpose; 4th, good honey gatherers, working from sunrise to sunset; 5th, strong and active in flying long distances for honey and vigorous in defending their homes; and 6th, long-tongued, thereby able to get honey from many flowers which some bees cannot use. To procure bees with these qualifications has been for many years the study of bee-keepers in Europe and America, and it is to give a short sketch of the races or varieties of the honey bee from which they have been and are selecting the queens and drones that these notes are compiled. The reader then proceeded to give the properties and habits of nine races or varieties of the honey bee, principally European, or found in the countries bordering on the Mediterranean Sea:—1st, the black or brown bee, which is our well-known ordinary hive or honey bee. 2nd, the Italian Alp bee (*Apis ligustica*), sometimes called the Ligurian bee, indigenous to the mountain districts that lie to the north of Italy and south of Switzerland. 3rd, Cyprian bees, which, as their name indicates, are natives of the island of Cyprus and parts of Turkey in Asia. 4th, Syrian bees, found on that portion of the mainland of Asia, that is situated north of Mount Carmel. 5th, the Holy Land bees, or, as the natives call them, Holy bees, found in Palestine, south of Mount Carmel. 6th, the Tunisian bees, inhabiting Tunis, on the north of Africa. 7th, the Carniolan bees, natives of Carniola, a province in South Illyria, in Austria. 8th, Hungarian bees, a race peculiar to Hungary. 9th, Egyptian bees (*Apis fasciata*), which abound all along the Valley of the Nile, and which, without exception, are the most ferocious bees known outside of India. Both papers were listened to with great attention, and elicited an interesting discussion.

BEE-KEEPING IN INDIA.—Bees are pretty generally domesticated in the middle and higher hills, but are rarely seen in the lower valleys. If a little care and management was bestowed on them, they would be very plentiful, and might be a source of considerable profit. The domesticated bee in the village of Gurwhat, and the wild one in the forests, is one and the same insect, and swarms often come from the

forest into the houses and leave the houses for the forest. Those that may be called domesticated are kept in the walls of the houses or outbuildings; but no trouble is taken with them, the young swarms even being left to go where they like, and the only time a Puharie troubles himself about his bees or their hives is when he takes the honey. In building a house or any substantial outbuilding, small oblong apertures are left at intervals in the walls, generally of the lower storey, about twelve inches by nine, and an oblong piece of board with a small triangular hole in the centre—secured in the wall while building—closes the aperture outwardly; and a similar board, without any hole and made so as to be removed at pleasure, serves a similar purpose inside. Six or eight of such hives is the usual number made in a moderate-sized house. Sometimes a portion of a hollow trunk of a small tree—if a piece can be found adapted to the purpose—is made into a hive by closing each end with similar pieces of board, and building it into the wall. All is now left to chance for swarms of bees to take up their abode in the hives. They may all get occupied, or only two or three, or perhaps more. To take the honey, the board which closes the hive inside is taken off and a piece of ignited cowdung is held inside, and soon fills it with smoke. The bees hurry out, and the combs are separated from the roof of the hive with a knife, and drop into a dish held beneath to receive them, scarcely a single bee being killed. The board is then put into its place, and as soon as the hive is free from smoke, the bees, which have been during the time clustering to the wall outside re-enter it. The hives are taken twice a-year, in May or June, and September or October, but are sometimes opened to take out a small quantity in the interval. The honey taken in spring is very dark-coloured, rank, and of a disagreeable flavour, while that taken in autumn is white and of excellent quality. In the forest the bees make their hives in hollow trees and sometimes in the cleft of a rock, and a great many of these wild bees are found and taken by the villagers.—*Summer Ramble in the Hymalayas.* Edited by Mountaineer. (Hurst & Blackett.)

A Curious Beehive.—An unusual discovery has just been made on the premises of Mr. Richard Skinner, clothier, Market Place, Wisbech, which may interest our readers. Mr. Skinner is having some alterations made at the back of his house, and on Tuesday, Jan. 26th, as the workmen were taking out the window of a bedroom they found that a swarm of bees had taken possession of the panelling, beneath which they had accumulated about two stones weight of honey. Portions of the comb were at once removed, and Mr. A. Bothamley, a local expert, kindly undertook to remove the swarm from their singular place of settlement. In his opinion the honey was all deposited during last year, and his belief is that the bees consist of a swarm which got lost, and took up their abode in their strange beehive upon accidentally finding ingress to the panelling. Mr. Bothamley states that it may interest bee-keepers to know that thus early in the season, and after very cold weather, the queen of the stock in question had begun to lay eggs, and that there was a large patch of brood from which the young bees would have very shortly escaped—a warning to bee-keepers to keep their bees warm. The whole of the honey taken was in a purely liquid state, not a particle of it being set.

Wasps.—Last spring I offered my little friends in the village a penny for every queen-wasp they would bring me, and fourteen of them brought me 362 queen-wasps. I am sure my honey harvest was better on that account, for the bees were not bothered as they had been the summer before. So the youngsters had each a 1-lb. section of honey as well, and are looking forward to catching queens again when the time comes.—Beeswing.

To Fasten Starters in Sections which have no Groove.—Split in half the top of an old section for a guide. Warm the edge of the strip of foundation at the fire, and place it on the new section, place the guide upon it the warmed edge projecting about the eighth of an inch beyond the middle, and beyond the guide, then with the handle of a teaspoon dipped in cold water, press the wax well into the wood. Turn the guide up on edge and straighten the starter up against it. I never dip the corners of new sections in hot water, or glue them up—the bees fix them up better than I can do.—Beeswing.

Selected Query.

[183.]—*Is a hive with two storeys, having together twenty frames, or a one-storey hive having the same number of frames, best for the purpose of obtaining extracted honey? Which interferes least with the ordinary working of the bees?*

A two-storey hive having twenty frames is unquestionably better, according to our experience, for producing extracted honey than a long hive having the same number of frames. Bees naturally carry their stores much more readily upwards above the brood-nest, and store only at the sides when they do not find room above. The frames being in two storeys, this plan also interferes least with the ordinary working of the bees. No queen excluder being used, the queen has free scope to lay to the utmost of her ability in either of the storeys, and if these two are not sufficient more can be added, but always above. We have always got the best results when working on this plan.—Editor.

I am strongly inclined to think the plan of placing the frames in two storeys preferable to that of putting them in one long hive, the doubled hive preserves a more equal temperature, presents greater facility for manipulating, and interferes less with the working of the bees.—J. Garratt.

As far as my experience goes, the hive with two storeys is far preferable to a hive containing twenty frames in one long storey. With the storified hive the zinc need not cover the entire length or width of frames, thus tending to induce the bees to travel up the sides of the hive rather than through the brood-nest, the square zinc acting as a barrier to the queen. Consequently the storified hive would interfere least with the ordinary working of the bees, and, as a sequence, the honey in a storified hive ripens much quicker than in a single long-storey hive.—W. Woodley.

I prefer the doubling or storifying plan. For this purpose hives containing ten frames each are large enough. This plan is most in accordance with the natural instinct of the bee, viz., that of storing its honey above the brood.—G. Raynor.

Long hives of twenty or less frames as hitherto used require too much manipulation of frames, do not economise the heat of the cluster, and are limited in capacity. The storifying principle excels any other for the production of extracted honey: a whole set of ten (more or less) frames can be shifted at one operation; such complete storey can be given, and will be fully occupied at one time, because of the heat being economised to the greatest advantage in this direction; and, moreover, because of the sectional nature of the storifying hives, any amount of space may be given by adding hive above hive.—S. Simmins.

I believe a two-storeyed hive interferes least with the ordinary working of the bees. But more depends on the *bees and their master* at all times than any particular form of hive.—Amateur Expert.

I began with the Pettigrew hives, made by himself, and which were especially adapted for two storeys, but adopted the hive as recommended by me in *B. B. J.*, 1883, thirty inches long, holding nineteen frames and a dummy, with extra entrance on the east side for nuclei, and doubling for utility in obtaining extracted honey, and which interferes least with the ordinary working of the bees.—R. Thorpe.

A hive of two or more storeys is much the best for obtaining extracted honey. After stimulating, spreading the brood until all the frames are well filled (which I explained in *Selected Query* 22, and which was more fully explained in 'Useful Hints' of March 4), and the honey season has set in, I would put on a zinc queen-excluder, and place a second storey upon it. I should myself prefer a shallower hive than one with Standard frames for the purpose of 'storifying' or 'tiering up'—a hive not more than six inches deep, similar to the 'Carr Stewarton' supers. As soon as the second shallow hive is nearly filled and partly sealed over, it should be raised and a similar one placed under it, and a third can be added in the same manner. In this way the extracting may be done at the end of the season after the busy time. This plan does not interfere with the brood or the bees in stock hives, as in no case would I extract from combs containing brood.—John M. Hooker.

JOTTINGS BY AMATEUR EXPERT.

'Mel sapit omnia.'

Comb Foundation.—Bee-keepers are democrats—I don't mean in politics—but nothing, however old or supported by 'constituted' authority, is sacred to them, they attack it and pull it down or uproot it with scant ceremony. The praises of foundation have been sung by all, but some would have us believe it had become a delusion and a snare. I advise, Don't be hasty, read Mr. Simmins' reasons carefully; his method is peculiarly his own, and in his able hands is successful: but should any be tempted to copy him in some small matter, and meet with failure, do not blame Mr. Simmins. Foundation is a case in point; his reasons for not using *it at the time he names* are weighty, but 'Nucleus' (168) would go off into another extreme by discarding it under all circumstances; and with the Editor I say it is a decided gain, and not a dead loss of four shillings to fit up a hive with foundation. In June, 1884, we had seven sheets built out, and nearly every cell laid in, even to the top row but one, in thirty-two hours. And what about excessive drone-comb, and the 'good old days' of drone-traps, are we to go back to them? But as to its use in sections, I quite agree with Mr. Sharp (80), and I can assure Mr. Simmins (154) that the distinction between sections in which full sheets or simply pointed starters have been used is not imaginary, neither amongst 'judges' nor customers.

Spring Stimulating.—Now, Mr. Seager, stand out and take your turn. I noted what you wrote at the time, and nodded assent; I knew what you practised, and your method of stimulating by brood as well as food, but you see how 'Rector' (121) and 'Nucleus' (168) have taken it. Well, now, like a doctor who recently advised a friend of mine to take *no* intoxicants (knowing he would take a *little*), I preach to some people, 'let 'em alone,' as I did last year to one who for five years never got a section from his bees, and begged of me to sanction his dividing his only strong stock, but he resisted the temptation, got a 40-lb. super, and—experience. And so with stimulating; up to the present I have done nothing to my bees but let 'em alone; but let the weather break, and the nice, clean, sweet combs that I have in reserve will be inserted where necessary (having been slightly warmed previously), and the days of let-'em-alone will be ended for this season. Let me say 'Hear, hear,' to Mr. Griffin (171), and keep an even temper if Mr. Seager don't let 'em alone.

Standard Sections.—An attempt was made at the last Quarterly Meeting of County Representatives at the B.B.K.A. to induce the latter to settle the question of standard sections postponed from the previous annual meeting, but the answer was that the question was settling itself, as could clearly be seen by what was offered to the honey companies, and $4\frac{1}{4} \times 4\frac{1}{4}$ for 1-lb., and $6\frac{1}{4} \times 5\frac{1}{4}$ for 2-lb. would soon be considered the standard sizes without the especial sanction of the B.B.K.A. But if 'Nucleus' can induce his county representative to introduce the question at the next quarterly meeting, 'A. E.' will be most happy to support him in an endeavour to get the B.B.K.A. to schedule the two sizes given above as 'standard.'

Open Court in Hives.—Mr. Ward (170) is smashing into that in a style that I greatly admire. I believe many bees worry themselves to death in these chambers, and I know many stocks have been suffocated as Mr. Ward asserts, and, what is more remarkable, if the bees are packed in front instead of back, they generally begin to breed on the front comb. Who possesses the wisdom in these matters, the bees or their master?

'South Cornwall' has treated me in true 'cousinly' fashion. If I said he struck out I did not say any of those things I enumerated had received blows, not even for the purpose of effective grouping; and will he please note our 'cousin' with the butter *took*, she did not *send?* Was it Cæsar who said something about 'serving yourself if you would be served?' The new rules are in effect that honey must be staged in a uniform way, bottles must be corked and capsuled, and sections must be glazed and the glass fastened with strips of white paper, 'cigar-box' fashion, not covering the whole of the wood, as now practised by some, and only to overlap the glass quarter of an inch:—more education for the cottagers. But I want to 'hark' back to his unripe honey; we seem to forget that honey will absorb not only various odours, but water as well in large quantities. It wants storing in a dry place, and if warm as well so much the better for you as well as the honey.

'Welsh Novice' must change his *nom de plume*, or his present one will soon become a misnomer. He has the make of a good bee-keeper, having a large store of what is the chief factor for beginners—pluck. If you can stand the stings you can put up with all the other ills bee-keeping is heir too, no profits included; and his own tale of woes so modestly told shows he has not had a bad breaking in. Will he try to remember the greater portion of these innumerable stings were the result of his being a 'novice,' and as he gains in practice he will lose in stings; and never forget to ask plenty of questions in our *Journal*, as in getting an answer for himself he is doing service perhaps for scores of others?

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

[184.] The value of honey imported into the United Kingdom during the month of February, 1886, amounted to 451*l.*—[*From the Statistical Office Returns sent to* E. H. Bellairs, *Wingfield, Christchurch.*]

SPRING STIMULATION.

[185.] I do not agree with 'Rector,' page 73, Vol. XIV., where he considers the 'let-'em-alone' policy to be the best for bee-keepers to pursue: but, nevertheless, there is truth in his statement that stocks heavily stored in autumn (generally) come out best in spring.

I have myself stated in this *Journal* that no amount of after care will make up for neglect in the autumn preparation of stocks. It is at that time when *true Spring stimulation must be provided for*, if we wish to make the most of our bees.

They should not only be judiciously stored, but it is imperative that the combs be old and tough, and also that the top of the hive should be arranged with warm material, equal to three inches of chaff; it is there where the heat escapes, and the sides will do just as well if one-eighth inch instead of three inches thick. There is nothing like tough old combs for keeping the bees warm, and a single wall is very desirable in winter, because the sun penetrates more readily, and warms up every seam of bees, enabling them during the coldest spell to repeatedly bring up the distant stores to the immediate vicinity of the cluster.

Now, while it is an evidence of bad management, when

at the end of the season a hive has its stock-combs stored sufficiently to carry it through the spring (unless in the case of very late districts), it is an undoubted fact that such colony needs but little more care before the next season; but, nevertheless, it is just these grand stocks which dare not be left quite alone until time for supering again, as at the last moment it but too frequently happens, because of their very prosperity, they either die outright, or else, for want of the needed assistance to tide them over the last bare time, they become so reduced as to destroy the whole of their brood, and then of course the season is lost.

A medium course must therefore be pursued; the 'let-'em-alone' policy does not do at all where the harvest is over by the latter part of July, as few colonies from that time onwards could possibly make their stores hold out, even if bad management had allowed them to fill most of the stock-combs; and, moreover, unless breeding had been carried on after the honey flow ceased, they stand a fair chance of dying out before the spring breeding will enable them to renew the population with young bees.

In my own district, where honey is obtained in greater or less quantity until after the middle of August, the bees continue to breed well into September; and if heavily stored before the end of that month, they require little more attention until late in spring, and I find the best stocks generally want the greater care towards the last.

I am not myself particular about stimulating and brood-rearing in autumn, because the condition of the locality provides for that. I simply close down at once by giving in one or two doses all the bees require; but where the harvest is of short duration, I strongly urge that at the middle of August (or beginning of that month if the queen has ceased to deposit eggs) every colony should have twenty pounds of syrup given as fast as they will take it; and then keep dry-sugar feeders going until end of September. Meanwhile the brood requirements will simply use up the unsealed syrup which is not desirable as winter food.—S. Simmins.

(To be continued.)

FOUNDATION FOR SUPERS.

[186.] In criticising my letter on the above, Mr. Simmins has omitted to make any mention of the most important point of my argument, viz., the superior quality of natural built combs compared with those raised from foundation; and as silence gives consent, I take it for granted that upon that question Mr. Simmins and myself are agreed.

But according to your correspondent's dictum we are to go in for quantity regardless of quality. We are to fill our sections with foundation consisting of we know not what, and which may or may not be worked out by the bees, and when such sections are completed, our customers are to be palmed off with the same under the designation of pure British honey. If any complaints are made, or any questions asked, respecting the hard substance found in the centre of every comb raised from foundation, we are to be sure and not let our customers know anything about the use of foundation. Such proceeding may suit the inclinations of some, but I would rather be exempt. I prefer supplying my customer with an article which I can guarantee absolutely pure with a certainty that such will give entire satisfaction, and thus extend my reputation as a vendor of a genuine article,—an article which I could stand and see cut up, or even analysed, without a blush or any unpleasant feeling being raised. But Mr. Simmins wants to know how I am going to supply the increased demand which I say will be sure to follow, if I cease to use foundation, when by pursuing such a course I shall, he says, sacrifice at least twenty pounds of honey per hive. Mr. Simmins is evidently under the impression that I am going to work my apiary entirely for comb honey; such, however, is not the case. If we are favoured with a good season, I hope to raise at least a ton of honey, but of comb honey I shall not attempt to raise more than 300 pounds, which amount I hope, with careful management, to obtain from fruit and other early blossoms. And by the time the honey glut comes, which as a rule does not commence until after the 15th of June, I shall endeavour to get every hive cleared of sections, and each stock furnished with abundance of storeroom wherein to store the hundreds of pounds of honey, which Mr. Simmins anticipates will be lost; and under such circumstances, I fail to see how I am going to sacrifice twenty pounds of honey per hive through not using foundation. But even if such a loss were incurred, there would be the cost of foundation to deduct from the product of the hive which, with the aid of such, had yielded the extra twenty pounds of honey. So that the intrinsic difference in the result of the two systems would not, after all, be so very great, especially if we take into account the many sheets of foundation which the bees make practically no use of whatever. I always try to underdo rather than overdo the quantity of comb honey I am likely to require. Raising sections on 'spec' is attended with too much risk, but the increased demand, which I still maintain will be brought about through selling none but natural built combs, will induce me to enlarge my apiary so as to get more sections filled during the month of May and early part of June, or I shall buy more largely of bee-keepers who have practically no market for their produce. But those who have supplied me in the past, and wish to avail themselves of my assistance in the furure, must please bear in mind that I resolutely refuse to deal in sections that have been raised from foundation anything beyond starters.

Mr. Simmins says, that 'after all it is not the public which, as a rule, can judge between honeycomb built upon light foundation and that without it.' My experience is that they not only can, but in nine cases out of ten do, distinguish the difference. Let only one who doubts this supply a customer with a given number of sections of honey-comb, half of which have been raised from foundation, the remainder without it, and mind if you don't soon hear that some of the combs are considerably better than others; or, sit down to tea with a number of friends where honey of both kinds is supplied, and you will see that those who partake of that raised from foundation will leave the mid-rim on the side of the plate, while those who partake of the genuine thing, will make a clean job of it, and will make such remarks on the delicacy of the comb as will be more than gratifying to the producer. Having tried the above experiments, you will no longer labour under the false impression that the public are just such fools as you would like them to be.

No one is more anxious for the development of the honey trade than I am, and if I have made any statement calculated to injure such, I am certainly very sorry for my indiscretion. Although, at the same time, I contend that a trade which will tremble and become menaced at the mere mention of a genuine article is not worthy of the dignified name it bears. It has always been and is still my firm belief, that the only way to permanently develope the honey trade, as well as any other trade, is to sell nothing but a genuine article. And in following such a course I fear none of the keen competition Mr. Simmins speaks of.—A. Sharp, *The Apiary, Huntingdon.*

THE WEATHER AND THE HIVES.

[187.] More ungenial weather for bee-keepers in the North Midlands can scarcely be conceived. Frosty weather prevailed uninterruptedly throughout February, and thus early in the season those apiarians whose hives were well stored with honey had no great cause to complain—desiring only a few warm days to allow their bees to take their much-coveted flight after a long en-

forced rest: but with the arrival of March, and the golden buds of winter aconite appearing, weather, suitable for the denizens of the hives, was naturally looked for and expected, and instead of a promise of spring we have had the grim reality of the most inclement period of the winter season. Heavy falls of snow, giving an average of four inches on the ground, and intense frost, 14° on the 5th, and 20° on the 7th, and 28° on grass; but it is not of this that as a bee-keeper I bewail the weather.

In well-secured hives frost is not of much consequence, my trouble began with the appearing of bright sunshine which, striking on the hives, tempted the bees to leave their homes; then, away from customary shelter, the cold air chilled them, and they alighted in numbers on the frozen snow never, alas! to rise again. a few minutes seemed sufficient to paralyse them. but while in this state they met another enemy more prompt in its destructive power, their always watchful and alert haunter of hives, Titmouse major, pounced down upon them, and finding so much food, so savoury and welcome in these hard times, the word was passed. numbers of other tomtits assembled to share in the good things of the feast, and when the living and dead were cleared from the snow these marauders stationed themselves at the entrances to the hives and snapped up every bee that appeared. Of course this could not be tolerated, and in two days no less than fifteen were trapped. The relation of an experience altogether exceptional may be of use and interest to some of your readers, and induce them to watch their hives.

I have stopped each passage of egress with wire gauze, and when the sun shines I hang thick shading in front, as the snow still covers the ground, and the hives would be depopulated if the bees were permitted to leave them.—Wm. Ingram, *Belvoir Castle, March 10th*, 1886.

P.S.—14th, frost still continues. The sum of frost (that is below 32°) up to this date amounts to 115.

SPRING STIMULATION.

[188.] May I inform the readers of your excellent *Journal* that our good friend, the Rector of Buckland Filleigh, Devon, is not only 'sound' in his opinions as to spring stimulation, but in every point he is most wonderfully practical, and is a thorough bee-master on the most natural principle. I hope, therefore, that the Rector will not only narrate his anecdotes, which certainly are most amusing and interesting, but will frequently give us his valuable help by telling us how to manage our bees and apiary.

The apiary at Buckland Filleigh Rectory is known far and wide and is visited during the summer and autumn by a large number of persons, rich and poor, anxious to see and hear some new thing about apiculture. The kind and warm-hearted Rector gives to each and all a hearty welcome and spares no pains in making their visit a happy and an instructive one. He is also a first-class lecturer on bee-keeping, and would do an immense deal of good to the cause in this way.—Old Drone, *March 12th*, 1886.

MOVING (?) BEES.

[189.] I have seen several remarks, Mr. Editor, lately in the *B. B. J.* anent moving bees. Let me tell your readers an incident that happened to me a year or two since, when engaged in a small undertaking of this kind. I had gone down alone from my upland rectory amidst the lonely wilds of north-west Devon to the T—— station some ten or eleven miles away for parcels, late one beautiful summer's evening, and on my return was asked by a cottager to buy a 'butt' of bees. To save the trouble of sending for them so many miles the next day, I stripped off some brown paper from one of the parcels, and with the aid of the man's pipe I soon drove the bees up into the skep sufficiently to enable me to wrap my carriage-rug round them, and popped them under the back seat of my four-wheeled dog-cart, and renewed my way at a brisk trot homewards, when, after I had gone three or four miles, I overtook an old man, who sang out, 'Will your honour give me a lift as far St. Ebb's Cross?' I pulled up sharp, and said, 'Jump up behind, my friend;' and up he got. Well, he seemed rather a taciturn old fellow, and did not seem inclined to talk, though I tried him from pigs up to politics; so I let him be. We had gone about a couple of miles when I heard a very forcible ejaculation from my friend to this effect: 'Darn them knats, how they do stang a body.' To this I thought it wise to make no rejoinder, fearing the sharp jerk to the pole in pulling up might have disarranged the rug round the bees. After a while came a direct question, 'Do them a darned knats ever stang your honour?' With hardly restrained laughter I muttered, 'Sometimes.' But ere I had scarcely finished the word came the soliloquy, 'I be blest if it baint a bee a crawling up my braches. Ye 'ant a got any baes, have ye, in the carriage?' I said in the broadest Devonshire, 'Ees, there's be a butt of 'em inside.' Before I could pull up he took a flying leap from the top of the dog-cart, and was soon making an extempore dressing-room, or rather undressing-room, by the edge of the moor, while his remarks on parsons in general were anything but complimentary to the cloth, and too strong for repetition. To bring my tale to an end, I left him seated on a hillock busily pulling out the stings from his legs nearly in a state of nature, all the while muttering curses on them 'dratted bee-keeping parsons,' who had 'a m'de 'un sit on the top of a butt of baes,' and 'he'd a see if he'd ever a let his old missus go to church agin, no, not he.' Finding all apologies on my part entirely unsuccessful, I left him, musing to myself that if his 'old missus' only got it as hot as I did, she must be accustomed to rather a warmish climate. So you see, Mr. Editor, to use a convertible term, if I moved my bees, my bees certainly moved my fellow-traveller in more ways than one. I need not say it has been a standing joke in my parish ever since, and if I am seen picking up any old folks, they are sure to be asked the next day, 'What did the passon *gave* ye to sat on?'—Rector, *Buckland Filleigh*.

BEES CHOOSING A NEW HOUSE.

[190.] I should like, with your permission, to offer a few remarks upon what to many is a most mysterious occurrence, viz., the fact that swarms, frequently on leaving their hives, or the spot chosen as a rendezvous, take up their quarters in an evidently previously selected place. Now, probably, few will deny that when the bees have decided to swarm—many hundreds, it may even be thousands—set off as scouts to find a suitable habitation. Well, a bee being almost above everything else a social insect, would be adverse to finding herself comparatively alone, and in the choice of an abode this instinct of love of society would probably be increased when in the act of preparing for swarming. One bee, or even small company of bees, would feel themselves only an atom or atoms of the great mass, and would feel an aversion to it, in proportion to their numbers being great or small. I do not believe that any individual bee has the power of communicating her ideas to her fellows, hence every scout would at first start off 'on her own hook.' But in time each one, or each company, finding out by investigation that the places they had chosen only commended themselves to a minority, would gravitate at last to the spot where the greatest numbers predominated, following a well-known law of nature of smaller bodies being attracted by greater ones. Their future home being decided upon, what next? I do not say there may *not* be a consultation as to when they should return

to their hive, but then a mere climatic disturbance may be sufficient to send them home. Now these scouts would of course be perfectly well acquainted—from constantly keeping up communication with the two places—with the bee line from the old home to their intended new one.

A suitable day at last arrives, the old home is overcrowded, and otherwise unpleasant—even men know what a jolly thing it is to clear out of an unpleasant house, the quicker the better. Off they rush like so much water out of a tank, but where are they to go? Ah! that's the question! The very fact of their nearly always settling, and that settling generally being for so long a time, proves that most of them, at any rate, have no idea where they are going to. After a time, feeling themselves certainly not '*busy bees*,' there is a general consensus for doing *something*. They mount into the air. The scouts take the lead to the place they had determined upon, the greater number acquiesce as following in the line of the least resistance to their love of society, just as a balloon ascends because the presence of the air, so to speak, is greater upon the sides and the bottom than it is on the top.—Alfred E. Booker Hill, *The Chase, King's Lynn.*

PRINTING OF THE 'SKEP' PAMPHLET IN THE WELSH LANGUAGE.

[191.]—I see from the *Journal* report of British Bee-keepers' Association Committee meeting that it is the intention of the Committee to publish the above pamphlet as early as possible. As a Welshman I hail with delight any means that may be introduced to induce my fellow-countrymen to adopt the 'humane system' of bee-keeping. If I understand matters aright, the object that the Committee have in view is to place in the hands of Welsh bee-keepers the means of acquiring a knowledge of bee-keeping; now, is the publishing of this pamphlet in pamphlet form the best way to attain the object in view? The Committee I hope will pardon me for expressing an opinion contrary to that of publishing it in book-form. As a bookseller, I have a little experience to back me, and I fully believe that the best means to reach the majority of the bee-keepers of the Principality is by publishing it in some of the newspapers. These are circulated in the remotest corners, and as a rule the whole of the paper is read. It would therefore, as a part of the newspaper, be read. I would secure it being published in the leading Welsh newspaper of South Wales, having a circulation of 10 to 12,000 in the counties of Glamorgan, Monmouth, Brecknock, Pembroke, and Carmarthen. Lest anyone should think that I have an interest in this paper, for their benefit I inform them that I have no more interest in it than your readers. Trusting that the Committee will see its way clear to publish it in this way, and that its members will pardon me for suggesting, I am, &c., A Welshman.

Honey.—From Liverpool we hear that the demand continues very poor, and is almost confined to the lower grades: 112 tierces of Cuban have been sold at 17*s.*, and 150 barrels Chilian at 15*s.* to 25*s.* 6*d.* per ewt., according to quality. For to-day's sale, 677 packages were catalogued, of which 500 cases of Californian went off well at 26*s.* to 34*s.* for sorted, 20*s.* to 27*s.* 6*d.* unsorted. Mincing Lane Market, Chemist and Druggist, March 4th, 1886.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[144.] *Preventing Casts.*—Instead of driving swarm from skep as proposed, I would now place it inside of bar-hive, and when skep is full of bees place five or six combs or sheets of foundation under it and allow them to work down, and when the combs are nearly full of brood lift off the skep and see that the queen is on the bars; if not place it on again and look in it next day or until you find her on the bars. Then lift the skep to a new stand and next day give it a young queen, or a cell from another hive. If a laying queen is given to the skep it can be placed on bars again in ten or fourteen days and treated the same way.—J. Saddler.

[146.] *Manipulating House.*—I have a honey house in my garden, right amongst the bees, and do not find much inconvenience from the bees getting in. Of course, it would be necessary to stop up all openings to keep them out; a window to open is a good thing to let them out if any do get in.—J. Walton.

[148.] *Bell Glass.*—It would not be advisable to put on a bell glass without excluder zinc, as the queen would be almost sure to go up.—J. Walton.

[150.] If *A Beginner* will communicate with me at No. 2 King William Street, Blackburn, I will give him the information he requires for a starter.—R. Middlebrook.

[152.] *Moving Hives.*—Wait a month and get half-inch square pieces of wood four inches long, bore a small hole on one end and thread on twine and place them between the end of frames, and frames and dummies, and jam the dummies hard up, close doors with perforated zinc and cover with thin quilt, then you may drive them anywhere.—J. Saddler.

[152.] *Moving Bees.*—Perforated zinc tacked over the entrances, and the hives placed on some straw in a spring van or trap, would be all that is necessary to move bees three miles at this time of year.—J. Walton.

[163.]—*Rate of Flight.*—(H. S. S.)—Last autumn I frequently observed my Italian bees on the heather on the neighbouring grouse mountain, two and three quarter miles distant from their hives, and at 983 ft. greater elevation (figures from Ordnance map) most of the black bees there were probably also from the same apiary. The Italians could have come from nowhere else.—R. E. Lloyd.

[178.] *How to tell from which hive a swarm has issued.* (W. G. E.)—By the diminished number of bees in the stock: this is easily ascertained by examination; usually you will find a few very young bees—that are unable to fly—crawling about the ground in front of hive. These have been crowded or carried out in the *mêlée* and not been able to follow the swarm; of course you will be unable to find these if any considerable time has elapsed since the exodus. In a frame-hive you can see the queen-cells in various stages of development.—W. B. Webster.

[178.] *Swarm Issuing.*—(W. G. E.) If you only have one swarm in the day, and your hives are all supered, the supers will be empty of bees in the hive that swarmed.—Young Bee-Keeper.

[178.] (W. G. E.)—You will find, in examining your hive, the one the swarm has issued from will appear almost depopulated from what it did a day or two before, and less ventilation will take place at the hive door.—James Ball.

[179.] *Sealing-Wax.* (Tyro.)—Venice turpentine 2 oz., shellac 4 oz., colour with either 1 oz. vermilion, or sufficient lamp-black mixed with turpentine to colour it. For common bottle-wax, melt together 18 oz. resin, 1 oz. shellac, 1 oz. bees-wax; and colour with either red lead, Venetian red, or lamp-black.—Nucleus.

[179.] *To make Sealing Wax.* (Tyro.)—Red sealing-wax is made by taking, say, six ounces of rosin and powder it; add four ounces of red lead, two ounces of vermilion, or less if expense be objected to, and the same of shellac reduced to powder. Mix all these well together, and melt over a slow fire. When thoroughly incorporated and fused, work into sticks. *Black.*—Same way, ivory black being used instead of red lead and vermilion. *Green.*—Colouring matter, finely powdered verdigris. *Blue.*—Colouring matter, verditer, or smalt. *Yellow.*—Colouring matter, massicot, or chrome. *Purple.*—Colouring matter, vermilion and smalt.—W. B. Webster.

[180.] *Köhler System.* (Tyro.)—This system is said to be perfectly practicable by the author of it. I tried it on two separate occasions last season, but failed. It entails a vast amount of trouble, with—in my case—very unsatisfactory results. I shall have another 'go' this next season.

Why not treat your nuclei in the ordinary manner?—W. B. WEBSTER.

[181.] *Bees dying for want of Food.* (J. H.)—By what method of reckoning did you know that there were twenty pounds of honey in your hive? You must remember that a frame weighing six pounds, which has been much used for breeding, will very often not contain more than three and a half pounds of honey, pollen very often being stored in same in considerable quantities. To a hive crowded on wide frames, I should allow quite thirty pounds of stores. Your packing was not at fault; there are much better ways of doing it; a box without top or bottom, about three inches high, having a piece of calico loosely tacked on in place of bottom, and filled with cork dust, is the best and cleanest method of top packing. You ought to have gently turned up your quilt during February, on one day of which, the 13th, we had splendid, warm, spring-like weather; you then would have discovered their condition, and so could have used means to save what would have been a splendid stock.—W. B. WEBSTER.

[182.] *In a dilemma.* (A. P. J.)—In quite a mediocre—for honey-gathering—part of the country, I should be anything but satisfied with such a balance-sheet; if in a large town you have done fairly well. Your price received for sections (6*d.*) is too low, consequently your profits have been very much reduced. Doubling section crates is the correct thing, if done with judgment. Make raisers to your hives between stock hive and roof, high enough to allow of sufficient space for your racks.—W. B. WEBSTER.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[192.] *Fertile Worker.*—Does a 'fertile worker' differ in appearance from the other workers in the hive?—A. B. JOHNSTON, *Co. Down.*

[193.] *Bees Crossing Water.*—Would bees fly from an apiary situated on the northern margin of a lake three miles broad to the opposite side to collect honey?—A. B. JOHNSTON, *Co. Down.*

[194.] *Drone-Laying Queen.*—Is there any probability that a healthy-looking queen, which performed her duties rightly until July last, and then commenced to deposit drone-eggs *only*, would return to her proper duty and deposit worker-eggs in worker-cells this spring?—A. B. JOHNSTON, *Co. Down.*

[195.] *Removal of Fertile Worker.*—What is the best method of removing a 'fertile worker' from a populous colony of bees in bar-frame hives in month of April? also in month of July?—A. B. JOHNSTON, *Co. Down.*

[196.] *Mouldy Combs.*—I found it impossible to extract all the heather honey, which appeared in patches, in my spare combs last autumn. The bees also failed to clear out completely what remained. The consequence is, that a good many of my extracted combs, stored by for future use, have become mouldy. May I safely give them to the hives by-and-by? and will the bees be able to clean them up?—R. E. LLOYD.

[197.] I have about 2 lbs. of run honey; what quantity of water should I put for spring stimulating?—WEST SURREY.

[198.] How long at this time of the year will bees live without food?—WEST SURREY.

[199.] *Extracting House.*—What would be the cheapest thing to erect for extracting purposes near the apiary? Last year I was greatly troubled with robbing by extracting in the open.—Br. W.

[200.] *Holes in Bottles.*—How can I make holes in thick glass bottles for feeders?—Br. W.

[201.] *Quilts.*—Can any reader inform me if the quilt is required when sections are used, and also the safest and best way of driving bees from a common box hive?—INEXPERIENCE

[202.] 'TREF-EGLWYS' requests some correspondent to describe or give drawings of porches and alighting-boards, suitable both for winter and summer use; the entrance may be 8 in. by $\frac{3}{8}$ in.

[203.] 1. *Mouldy Combs.*—On examining one of my hives to-day I found an outside comb slightly mouldy, the comb is full of pollen—is it needful to remove it or will the bees clean it when the weather gets warmer? also, what is the cause? The hive is perfectly dry, the frames are at right angles with the entrance, which has been wide open all the winter. 2. *Croaking Noise.*—I also noticed a peculiar croaking noise among the bees—what is it? I remember hearing a similar noise in a hive last summer, when I opened the hive to ascertain the cause, but failed.—NUCLEUS.

Echoes from the Hives.

Chippenham, Wilts.—I have not disturbed my bees from October to the present time (March 10th), as I fully believe in the let-alone system during such period: and although the winter has been an exceptionally long and a *persistently* cold one, I am glad to find all my stocks are alive. In such a winter, it is not surprising to find that a larger number of old bees than usual has succumbed, and will succumb to the weather and long confinement, and in this district the stocks will be, no doubt, somewhat weakened from these causes. The thermometer here has, during every day and night in March, stood at freezing point, with a cutting east wind. But notwithstanding this, many of the vigorous bees in my hives have, during gleams of sunshine, ventured forth, much against my will, and their own safety.—W. A. WARRILOW.

North Staffordshire, March 3th, 1886.—My bees had two flights in February. On the 1st inst., a severe snow-storm set in, and the snow has not yet cleared away. The 7th and 8th were very bright; all my hives were shaded from sun except one, the wind having blown down the board, when the bees came out and hundreds perished in front of the hive. To-day I removed all shades and all have had good flights. Examined four stocks and found brood in all stages in each, although the night of the 6th registered twenty-two degrees of frost and eleven degrees the following night, with several degrees of frost every night since.—NUCLEUS.

Alfriston, Sussex, March 13th.—Weather keeps dull and cold, as it has been for two or three weeks; bees flew a little on one or two days this week, a little pollen coming in. Have had to feed one stock of driven bees a little with warm syrup and candy. One or two of my stocks have had dysentery slightly, but since I changed quilts have not seen any more signs of it. I hope we shall soon have some fine weather so as to begin stimulating.—YOUNG BEE-KEEPER.

Chester, March 15th.—Yet another week of 'beasterly' winds and hard frosts at night. Dysenteric signs at entrance of some hives; the ground is still covered with snow. I saw *one* bee carrying pollen yesterday, this in a stock of hybrids. I suppose the pollen was obtained from some tall growing plant in the neighbouring nurseries. I am quite close to some hundreds of acres devoted to nurseries.—C. ROBERTS.

Ballyskeagh, Dummurry, 6th March.—On March 1st (Monday) we had a very heavy fall of snow here, fully nine or ten inches, but which drifted, and in some cases almost covered hives. On Friday, 5th, sun was very bright, and I fear many bees were enticed out never to reach their hives again. We have very severe frosts at night, and up to time of writing there is no sign of change. I saw bees busy on snowdrops during one or two fine days last month, which gave an opportunity for cleansing flight, as I did not see them out during the previous six weeks. Have not got opportunity to report how I have wintered my stock.—P. M'H.

Lucan, Co. Dublin, March 14th.—The winter here has been by no means so severe as in England. We have only had two heavy falls of snow, each disappearing within a week. We had one day's skating in December, but have had no hard, continuous frosts since. I had a very good season last year, taking 170 lbs. of honey from three hives,

two of which were only swarms, all of which I have sold, realising 1*s.* 2*d.* per lb. on an average all round. I went into winter quarters with six stocks, giving each of them rather more than 30 lbs. of syrup, which they sealed before the end of September. They have kept very quiet all the winter, and on no day that I saw were they flying in any numbers. March winds have set in now, and though the crocus and snowdrops are in full bloom, they are not working at all. I do not intend to examine till the last week of this month, as I am sure all are well.—WALTER J. STANFORD.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

R. J. S., *Caran.*—1. *Sugar.*—Porto Rico is the only sugar suitable, and needs no preparation farther than to be given as recommended by Mr. Simmins for spring stimulation. 2. Bees do not store it as honey. While being highly stimulative, the above process ensures that nearly all is used as fast as it is reduced to the liquid form. 3. *Extracting.*—Yes; being built where they are at once toughened by being bred in, they are quite equal to combs built on foundation in the same situation.

E. A. S.—*Bees attracted out by warm Sunshine to perish in the Snow.*—Your case will be found to exactly represent that of many this season. The snow lying on the ground at this season, when the sun has such power in the middle of the day, leads to great loss of bee life. You do not mention the construction of your hives, but we presume they have the frames at right angles to the entrance. When this is the case it is difficult to prevent either direct or reflected light entering the hive. When the frames run across the hive and the bees are located at the back, forming an ante-chamber, no light can enter and thus the bees are not tempted out. If perforated zinc is used it would be likely to lead to suffocation. You may safely raise the quilt and push a cake of candy under it on the top of the frames.

REV. S. HARDINGE.—*Granulated Honey.*—Granulated honey is not injurious to bees, but much of it they are unable to consume unless plentifully supplied with water, or moisture of some kind, by which they are enabled to melt it. It is much better to melt the granulated honey over a fire, keeping it just below boiling point, and to thin it down to the consistency of feeding syrup by mixing hot water with it.

J. BALL.—The examination of a candidate for a third-class certificate is not very difficult. It is necessary for him to prove to the judges that he has a fair knowledge of bees, and an ability to manipulate. The second and first-class examinations are more difficult, and require a considerable acquaintance with the literature of apiculture. He is also required to be able to write and speak upon it. The place and time of examinations are determined by the secretary of the Association of the county where the candidate resides.

ONGAR, *Essex.*—1. *Fixing wire in frames having saw-cut in top bar.*—Drive thin wire nails horizontally through the two halves of top bar and pass the wire through the saw-cut and over the nails. 2. *Bees leaving Hive.*—We cannot give you a reason unless you give us some particulars. Was the honey left granulated, and in what part of the hive was it left? Were there any dead bees amongst the combs? Was there a young queen in the hive in November? Was there anything unpleasant near the hive?

GEORGE D. CLARK.—*Good and bad points of frames 1¼ inches apart.*—We have always advocated frames without projecting shoulders or distance guides, and our reasons have been that we were able to bring our frames to 1¼ inches from centre to centre, and in this way prevent any production of drone brood and restrict the combs to worker brood only. This has also the effect of making the bees store their honey in supers. If we wish drone brood, the combs can be placed further apart, and if wanted for honey only they can be gradually brought to two inches from centre to centre with advantage. We do not think it would do to have the shoulders cut, so as to keep the frames permanently at 1¼, as this is too close for winter. We have only had one instance of bees refusing to work on foundation in Stewarton honey boxes, and that was owing to the foundation being made of paraffin, and in this case the bees built combs in between, refusing to use the adulterated foundation.

E. T.—*Vignole system of Swarming.*—It is claimed for this system that it is an advantage for the hive to be queenless at this particular period, and if you wish to give it a fair trial do not deviate from the description given by either adding frames of brood or giving a new queen. If you wish to manipulate further you can work on swarms from A before B and C stocks, but by the time A's first swarm is in the best condition B stock ought to have re-established itself sufficiently to be displaced by it. A stock, after the bees are driven, is removed from the apiary, its work having been accomplished.

T. JENKINSON.—Place yourself in communication with the Secretary of the Cumberland B.K.A., the Rev. J. Phelps, Houghton Vicarage, Carlisle, who will be pleased to give you the information you seek.

We have received from Messrs. Abbott their abridged price list, also a sheet illustrating the goods they have now on sale at their newly-opened agency in Paris; this latter also contains very pertinent instructions as to the management of bees in France. We have much pleasure in noting this outlet of the abundant energy of this well-known firm, and hope they will reap much advantage from their new venture.

Messrs. Edey have forwarded a sample of their reversible frames. Their mode of reversing is unique. Thick wire revolves from the centre of sides of the frames; and it is so twisted that the distances between the frames, and between the frames and the side of hive, are kept. We should fear from the springiness of the material that the position of the frames in the hive could not be sufficiently rigidly maintained.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
WITHINSHAW, A., Nantwich, Cheshire.
WREN & SON, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

BEE & FRUIT FARMING Co., Limited, St. Mary Cray, Kent.
BRITISH HONEY Co., Limited, 17 King William St., Strand.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
WALTON, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

BENTON, F., Munich, Germany.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

LYON, F., 94 Harleyford Road, London, S.E.

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Editorial, Notices, &c.

THE PROPOSED CANADIAN APIARIAN EXHIBITION.

At the last meeting of the Committee of the British Bee-keepers' Association, a suggestion was made that during the time that the Colonial Exhibition was being held it would be desirable that a British exhibition of honey and bee-appliances should be held in the large Conservatory of the Royal Horticultural Gardens; and to give effect to this suggestion, a number of those present expressed their willingness to contribute towards a Fund to cover the preliminary expenses and other possible charges. Since that meeting the members of the Committee have been using every effort to make arrangements to carry out the above suggestion: but we are not at present in a position to say to what extent their endeavours have met with success.

While, then, the matter of the British exhibition is still pending, it will be desirable to look abroad and see what is being effected in our Colonies, and the position they desire to occupy in the forthcoming International Show. We are not able to state to what degree Australia, New Zealand, the West Indies, and other colonies, intend to exhibit: but as the time approaches for the opening, they will, doubtless, give evidence that they have not overlooked the opportunity now afforded them of proving to the world the ability of their respective countries to produce honey and wax.

Canadian apiarists, however, have taken the initiative in the matter, and they are evidently determined to use every effort to make an effective exhibit of their honey produce. We must give all credit to Mr. D. A. Jones, of Beeton, Ontario, for having taken the lead in stimulating his fellow-countrymen to take the first step, and for pointing out the advantages that would accrue to the honey industry of Canada in acquitting themselves worthily in, and acting earnestly on behalf of, this exhibition. From the antecedents of Mr. Jones, we might have been led to expect that in undertaking an object of this nature he would carry it out effectively and thoroughly. It was Mr. Jones who, in the summer of 1879, to use the language of Professor Cook, inaugurated 'the grandest enterprise ever undertaken in the interests of apiculture,' viz., the importing of queens from the East. In that year, having secured the services of Mr. Frank Benton, at that time a graduate in the Michigan Agricultural College, an excellent linguist and a skilful apiarian, he visited the apiaries of the principal bee-keepers in Europe. They then located themselves in Cyprus, and there established an apiary composed of Cyprian and Syrian bees. Leaving Mr. Benton in charge of the apiary at Larnica, in Cyprus, Mr. Jones betook himself to the Holy Land, and there came across the race of Palestine, or 'Holy' Bees—a race which he pronounced to be superior to both the Cyprian and Syrian variety (see his interesting letter to the editor of *Bee Journal*, vol. viii., p. 32). The following summer Mr. Jones returned to America with several hundreds of Cyprian and Syrian queens, leaving Mr. Benton to continue the work of rearing and exporting queens—a work which that gentleman has continued to prosecute with assiduity to the present time. Mr. Jones is the owner of several large apiaries in Canada, conducted with the greatest amount of intelligence and skill. In April, 1885, Mr. Jones established a weekly periodical called *The Canadian Bee Journal*, which he has edited with the greatest advantage to apiculture, and which has given a great impetus to bee-keeping in that country. Mr. Jones, appreciating the great service that the Colonial Exhibition would be to Canada, made application to Sir Charles Tupper, the Canadian Commissioner, for 4000 feet of space, which were at once granted to him. This grant Mr. Jones has handed over to the Ontario Bee-keepers' Association, who, having accepted it, have shown great activity in prosecuting the work, with a full sense of the responsibilities they have undertaken. Mr. Jones has promised to furnish supplies, honey-plants, &c., so that the space allotted may be occupied until the honey harvest of 1886 is ready.

Mr. S. T. Pettit is the chairman of the Ontario B. K. A. and he is now the medium of all communications respecting the Canadian Exhibition. It was determined by Mr. Pettit and his Committee to interview the members of the Ontario Legislature with a view to obtaining from them the necessary assistance in carrying out their purpose. The members having been appealed to, the result has been most gratifying and hopeful. The Government have expressed their willingness to give the Association the assistance they required, and have granted them the sum they asked for, namely, $1000, and have also promised to incorporate the Association, and give it annually a grant of $500.

The Committee have passed the following resolutions:—

'That all goods sent forward by the members of the Association, through the Commissioners, shall be at the risk of the producer.

'That the Commissioners shall be empowered to dispose of the goods after the exhibition is over on such terms as in their judgment is best.

'That the Commissioners shall give their time free of charge, but their necessary expenses shall be borne by the Association.

'That all necessary expenditure in connexion with the exhibit over and above the amount granted by the Ontario Government to be made *pro rata* from exhibits sold.

'That all members of the Association desirous of for-

warding any goods with the first shipment, will need to forward them by freight or express (prepaid) to Beeton, Ont., to be shipped from there at the cost and charge of the Government.'

The services of Mr. Neighbour will be put in requisition, and he, assisted by Dr. May, of Ontario, will arrange the first exhibit.

Provision will be made for exhibitors to sell honey while the exhibition is going on, provided the main exhibit is left in order, and the goods can also be sold in the lunch-room or dining hall.

It was the purpose of the Commissioners that all exhibits of honey should be conveyed to Beeton, Ontario, at the expense of the exhibitors; but the distances between places in Canada are very great, and the probability is that the Ontario B.K.A. will defray the expenses of transit to Beeton, and the Government subsidy be utilised in paying the expenses from Beeton.

It is therefore seen from the foregoing summary that our Canadian brethren are proceeding very systematically and successfully with the work they have undertaken, and that their exhibits of honey will not only be large in amount, but the best and the purest that the country can produce. They have the right men as their leaders, who are ready to prove their ability to take a proper advantage of the opportunity now offered them, and to see that Canadian apiculture is worthily represented at the forthcoming Exhibition.

LINCOLNSHIRE AGRICULTURAL SOCIETY.

Lincoln Exhibition.

We have received the schedule of prizes offered for bees, honey, hives, &c., by this important County Society, who have arranged to hold their annual exhibition at the ancient city of Lincoln on the 21st, 22nd, and 23rd of July, as announced in our advertising columns. The bee department will, by desire of the Council, be under the direction of members of the Lincolnshire Bee-keepers' Association as heretofore; and judging from past events of this Society's doings, we may look forward to a grand show: the city of Lincoln being favoured with easy rail access from most quarters of the country, will doubtless draw many exhibitors and *bee visitors*.

In looking through the schedule, we notice class 15; 'To the competitor who shall show the greatest skill in driving a stock of bees from a straw skep, and capturing the queen, and who shall best explain the method and object of the operation,' five prizes are offered; and to us it appears to point at something more than at first thought might occur; perhaps, however, we might not be far wide of the mark in a surmise that the framer of this novel class had something in his mind in the way of testing and bringing to the front the skill and knowledge of Lincolnshire bee-keepers, and so to show practically the value of the work carried on by the Association, and further to be able to note to anyone asking aid one competent of giving it in the various districts.

LOCKE'S PERFECTION FEEDER.

This feeder, of which we give a sectional drawing, is made of tin to hold from one pint to several quarts. It is simply a shallow cylinder with a hole in the top, and another one at the bottom, the top one being provided with a screw cap, and the one in the bottom closed by means of a piece of sponge. When wanted for use, a hole is cut through the quilt about 1¾ inches in diameter, and the feeder placed over it. The food is then poured into the hole at the top, and the cap screwed down. The chaff cushion is then placed over the whole to keep it warm. The bottom edge of the feeder has a rim to raise it off the frames, and the under side is covered with cloth secured to it with bees-wax and resin, which renders it impervious to moisture, and forms a non-conductor of heat for the bees to cluster under it and round the sponge without becoming chilled. The syrup

Locke's Perfection Feeder.

soaks and passes through the sponge as fast as the bees take it. The feeder must be filled as rapidly as possible, and the cap screwed down, or there would be a risk of the syrup running out too fast. This feeder is on a similar principle to the Raynor feeder, in that it is placed directly over the cluster of bees, and this is not disturbed in their endeavouring to obtain food. The temperature of the food is also kept up by the heat rising from the cluster of bees below. Mr. Alley, one of the most advanced bee-keepers in America, has used it extensively, and speaks favourably of it, and says that one of these feeders large enough to hold sufficient food would keep a colony for a whole winter without any capped honey at all. Being made entirely of tin, their cost places them within the reach of all. They can be used equally as well for supplying bees with water if this be required. To manufacturers we would suggest that the hermetically fitting caps of the 'Self-opening Tin-box Company' are admirably suited for closing the opening, and would be not only cheaper, but more effectual than the metal screw-caps.

GLEANINGS.

In *Gleanings* we find an interesting discussion at the Ohio State Bee-keepers' Association meeting on the subject of bees trespassing and injuring grapes. A. I. Root states that he has several hundred grape-vines right over his hives, and never finds his grapes injured by the bees. He also states that a Massachusetts fruit man once compelled a bee-keeper to remove, because he claimed that his bees injured his fruit. A trial of several seasons without the bees was a failure, and the bee-keeper was prevailed upon to come back.

With regard to moving bees during the working season, Dr. Besse states: 'Move five or six swarms every evening, after bees are all in the hive, and set the hives far enough apart to set others between them when moved next evening. Set a board or three or four stieks of storewood in front of the colony moved. I moved one hundred colonies 250 or 300 feet, and very few bees, if any, went back. They were caught in a nucleus hive on the old stand. I would advise removing strongest first, then the returning bees would reinforce the weaker ones left.'

In *Gleanings* A. Benedict advises beginners to go slow in extracting and learn the business, or they may produce bad results and get discouraged. He uses a moveable bottom hive, and ties up in extracting. If the colony swarms he hives it on foundation-combs under the old colony, placing a wire cloth between the two for a day or two. The queen begins to occupy the lower storey, and as the bees hatch out above the honey is stored in the frames. By this method he gets a large body of bees at work in a single hive.

In *Gleanings* J. M. Shuck states that in his effort to get comb-honey in the brood-chamber he divided the brood-nest with cases of sections. In these experiments he invariably got queen-cells in all, except the division occupied by the old queen. He has also raised queen-cells in an upper storey when the lower was occupied by a laying queen. Ordinarily the cells are larger, and the queens of better colour when thus produced. The cells, he says, must of course be removed for the final emerging and perfecting of the queens.

In the *Prairie Farmer* Mrs. L. Harrison states that when there is a great flow of honey the queen is crowded out, as the bees will encroach upon the brood-nest in their eagerness to save as much as possible. She has at such times inserted an empty comb in the centre of the brood-nest, thinking to give the queen some room, but found on investigating a day or two later that every cell was filled with honey. Their motto is, 'Make hay while the sun shines.' She also states that the empty space in a hive beyond the division-board can be utilised by filling it with frames of empty comb, and the bees will protect them from the ravages of the larvæ of the moth. She also noticed that in the spring, in hives containing honey where the bees had died, the robber bees destroyed the larvæ of moths. Italian bees war with them continuously, while black bees let them revel in their choice comb.

In the *Bee-keepers' Guide* A. G. Hill states that fertile workers, if once well established, it is quite difficult to get rid of them, as they will often destroy introduced queens, queen-cells, and prevent the rearing of queens. If, however, you change the brood-combs with a good colony, shaking the bees off the combs before making the change, they will disappear, and you can introduce a cell or laying queen at once. A few brood-combs exchanged is not effectual; it seems to require a host of hatching workers to stop the work of a fertile worker.

In the *American Apiculturist* Arthur Todd, in speaking of M. Ossipow's camphor treatment of foul brood, says that when living in Algeria some years back, he found that great reliance was placed upon the emanation from the leaves of the eucalyptus trees as a curative agent against fevers, especially those of a typhoid character. These trees, he says, belong to the camphor family, and he was informed that bees were always healthy when placed under one of these trees.

In the *American Apiculturist* one of the editors says: 'Like all other business, bee-keeping has its "ups and downs," but no one should be discouraged by meeting with an occasional drawback; we must expect to experience disaster and ill-luck sometimes. Neither should we expect or look for a large crop of honey every year. Last season Californian bee-keepers sent an immense crop of honey to market; this year they have but little if any to send. Last year bees did poorly in Vermouth; this year they have done extra well. Do not get discouraged, push on as if nothing but prosperity was certain to crown your efforts. If disaster comes, repair the damage as quickly as possible, and push right on the same as though nothing of consequence had happened.'

In the *American Apiculturist* we read that not far from five thousand queen-bees are reared and shipped from the State of Massachusetts each year. While Vermont and Maine are noted for their fine honey, Massachusetts bee-keepers have the credit of rearing the finest queens in the world.

In the *American Bee Journal* the Rev. E. L. Briggs says to make bee-keeping a successful business 'muscle and brain' must go together. It is no small business, but covers a great field of labour. We cannot expect to make a living by keeping only one colony of bees, any more than by keeping one cow or one hog; but any man or woman with a quarter of an acre of ground well stocked with bees can compete with a farmer having 160 acres of land.

In the *American Bee Journal* James Heddon says that some bee-keepers are fearing the result of the coming winter because their colonies ceased breeding early, and the hives contained no young bees; and he thinks this fear is ill founded. Bees, he says, do not grow old with time, but with exertion. Colonies of bees that have not bred late have not exerted themselves like those that have. The creation of young bees is always at the expense of the vitality of the older ones. Young bees do not enter the quiescent state, so desirable for safe wintering, as do old ones. In this state little food is taken, and scarcely any vitality lost. Bees preserve this vitality (age) wonderfully during autumn, when conditions are such as to discourage breeding.

THE DEATH-CRY OF THE BEES.—'Ave, pungende! morituri te salutant.'

Foreign.

CANADA.

Paper read at the Convention of Canadian Bee-keepers held at Brantford, Canada, February 24th and 25th. Honey, what is it? What shall we do with it?

The subject before me is, in its fullest sense, a very broad one, and, as many of us are aware, a very difficult one to answer.

As to the first question, Honey, what is it? The question can be viewed from a great many standpoints as a natural product. It is the secretion of, and found to a greater or less degree in all, or almost all, flowers at the particular time when they are in a state to be fertilised. There is no doubt our Creator has ordained it, that the aroma which the flower is distilling shall attract the insect, which must in its visits come in contact with the pollen, and in that manner assist in fertilising the flower. If the flowers are not fertilised we would have neither seeds nor fruits. Darwin gives the following experiment: 'Twenty heads of white clover visited by bees produced 2990 seeds, whilst twenty heads so protected that bees could not visit them produced not one seed.' The sources of honey are, then, as numerous and as varied as the flowers from which it is gathered, as we know in Canada our principal honey crops are secured from clover, basswood, and thistle, and an inferior quality in some localities from buckwheat. The three first named are excellent; they differ somewhat in flavour: clover is very mild, basswood is lighter-coloured (a somewhat stronger flavour), thistle has a very nice colour and flavour.

Canada, as we know, produces a honey second to none. At Philadelphia it took the first prizes and sweepstakes from the world. The reasons assigned for our honey being of such quality are, the extremes of winter and summer, the nature of the soil, its flora, and other favourable climatic influences. In quantity, for a decade of years we are favoured. Chemically, honey is largely composed of carbon, hydrogen, and oxygen; the proportions vary, and how held together it appears the chemist has not yet revealed to us. Honey appears to have peculiar medical properties. From the oldest time it has been used and valued as a nourishing food and restorative to health, as well as a preventitive of disease, keeping active the pores of the skin, and restoring its nervous action. For colds of all kinds it is known to be invaluable. For children it is the most nourishing and wholesome of foods, and as such stands without a rival.

Honey appears to be assimilated by the bee under proper atmospheric and other conditions, with little or no effete matter, and appears to have in combination almost all the elements necessary to sustain life. One of the reasons honey is such an excellent food may be that the bee as she gathers stores it in a sac for the purpose, and in this sac the honey may be acted upon by secretions which facilitate the assimilation in our systems. As food for the economic housekeeper, none can aspire to the highest place as such unless it is constantly found in their larder. Honey will, under any ordinary conditions, keep for months without deteriorating in value, and has been kept for years without appearing to deteriorate in value as a food. Unlike fruits canned and preserved, and many other such foods, honey can be opened and contact with the air permitted without souring, moulding, or in any other way destroying it. Take an ordinary quart jar; it holds about three pounds of honey, say 45 cents. Now take the fruit for preserving. Strawberries will require about three 'boxes,' and a proportionate quantity of sugar. Strawberries are about, if not quite, the cheapest of small fruits, and they cannot be preserved for less than 15 cents per quart, probably more. They may be canned for about 37 cents. We all know where honey is habitually used a quart of it will last longer than a quart of canned or preserved fruit. As an actual food, which the man who 'eats to live' should always estimate upon, honey heads the list by far. In baking and pastry honey has the effect of giving a rich flavour, and keeping cake moist and fresh for a great length of time—quite an item for a house which does not generally use such luxuries, and still

desire to have them on hand for any friend who may unexpectedly visit them. It is also used to great advantage in preserving and canning fruit if not of too liquid a nature. Our honey is used by the pork-packers, tobaccenists, &c.

Now, with our honey, the best in the world, and the article valuable in so many ways, the question, What shall we do with it? should not be a very difficult one to solve. We know that where one pound of honey was used six years ago there are twenty-five if not fifty pounds used to-day. The demand has increased very rapidly, and if our product were not as good as it is we might be surprised at the increase, for we certainly have not done much to increase the demand. A few of us have exhibited at fairs, &c., and a few more have canvassed in towns and country localities, and what have the remainder done? Sat down and waited until some one knocked at our doors and gently inquired, Would we sell them some honey? Or, as they were following other pursuits, they made the sale of honey a bye consideration, and in that way disposed of it. But to-day, in this whirl of activity we must be active or we will be swept off our feet. It will not do for us to wait for customers, but we must look for them and convert them. We must educate the public to use honey, and with few exceptions once introduced in homes as a staple article its merits will shine forth, and a demand remain year after year. We must push the sale of it in every manner, and develope the home market. There is undoubted room, and if not ample, at least a large and undeveloped field in Canada. How to go about it I will not discuss in this paper. Space will not permit. Lest it should be said I am in any way attempting to hinder or throw an obstacle in the way of the contemplated display at the Colonial and Indian Exhibition, I would say, No, let us make the display. The larger our market the better. But let us remember our success will depend upon ourselves. It lies in our power largely now to work for good or ill. It is imperative that the display should be a gigantic one, and the quality should be of the very best. We must expect to find there as here the ready sale of honey limited, of a certain quality a plentiful supply. What must we then do to develope a market for ourselves? First, if possible, and if we send only our best it is highly probable, we must have a better honey than they have at present upon the market. Poor lots of honey will do us an injury which it will take years and hard work and expense to efface. *Good* honey will require to be pushed to supplant an inferior.

Let us take a lesson from the story of the large English butter-dealers—what do they say? 'We do not want to handle your (Canadian) butter. We cannot depend upon the quality. Five per cent is good, a small percentage fair, and the rest bad. We have to examine it all to see the quality, and we must probe to the bottom of every package. We can buy Danish butter and resell it and *never look* at it, *every* package is just as it is represented to be.' Brother bee-keepers of Canada, let us be the Danes in our honey dealings, and from the commencement establish a reputation above suspicion. But I think our work will not cease here. We will *there* have to develope the honey market. We will have to make every effort to place the honey in the hands of people who have never used it before, and cultivate a more general use for it.

I think the Exhibition will be an important factor in this development, and the more exhibited the better. Therefore Canadians should send and aid in perfecting this display. I think every package should have a brief history of how extracted honey is secured and its merit, to aid in educating the public and disseminating apicultural knowledge. And do I think we will push other honey off the market? No; not unless it cannot compete as to quality. In fact, I think the coming display and our united push will draw the attention of the public to honey, that the consumption will be wonderfully increased for the benefit of home and foreign producers, and—not to be forgotten—the consumer.—R. F. Holtermann, *Brantford, Canada.*

SOUTH AFRICA.

Among the 'passengers' that left by the *Norham Castle* on Saturday last, Feb. 20, for England, was a colony of live honey-bees, sent by Dr. Stroud, of Port Elizabeth, to Dr. Walker of Wimbledon, under the care of Mr. John Harris, of Graaff-Reinet. Though small numbers of bees have many times been brought to the Cape from England, these are probably the first of their race that have ever been removed from South African shores. If they survive the voyage, and every provision has been made for their well-being, and every contingency arranged for, the South African 'natives' will, no doubt, be an object of interest at the Colonial Exhibition. Mr. Harris, of the firm of Cleghorn and Harris, Port Elizabeth and Graaff-Reinet, is himself an experienced bee-keeper, and under his auspices and intelligent attention it is believed that they will reach their destination.

[The above is an extract from a Graaff-Reinet paper. From a communication from Dr. Walker, p. 129, we learn that the bees have reached him safely. We hope he will be able to render a good account of them.]

ASSOCIATION.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

At a Committee meeting held on Saturday, 13th inst., there were present, Messrs. Carter, Foxon, Meadows, Pridmore, Walker, Saunders, Ward, and the Secretary. Mr. Carter was voted to the chair.

The minutes of the last meeting were read and confirmed, and after a short statement respecting the financial condition of the Association the prize schedule for the ensuing annual show was drawn up.

The Rev. J. Bird, T. Brooks, Esq., Mr. W. P. Meadows, and Mr. Walter S. Pridmore, were then selected to form a deputation to confer with the Council of the Leicestershire Agricultural Society on the subject of providing for the Annual Show. It was then proposed, seconded, and carried, that Mr. Bickley's name be added to the Committee.

The forthcoming Conversazione next came under consideration and arrangements were made to hold it on May 1st, in the Mayor's Parlour, Old Town Hall, Leicester, at 2.30 p.m. The Secretary was directed to ask the Mayor of Leicester to take the chair, and to give notice of the Conversazione to the members by circular. Some interesting papers on bees and bee-keeping have already been promised.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SPRING STIMULATION.

(*Continued from p.* 118.)

[204.] It is useless to say 'let-'em-alone,' because it simply shows bad management to permit the brood combs to become clogged with sufficient honey to keep the colony supplied until near another season. All the time sugar can be supplied at one-third the cost of extracted, or one-fourth that of comb honey, we must appropriate every pound of nectar, more particularly in those times when prices have gone down considerably; though for that reason 'Rector' considers the bees should have only honey to live upon.

With the stock combs comparatively clear when last surplus is removed, we have a much larger population, and by then feeding as mentioned in my last we main-

tain that strength without undue breeding. At the same time having secured a larger honey-crop than where the bees have been allowed to store themselves at the expense of the surplus we also have them in better 'heart' than any which are allowed to provide for their own welfare.

It is not the practice of feeding, but its abuse, which has induced some to think with 'Rector,' that bees are best left entirely alone; though the 'let-'em-alone' policy is far before that which induces bees to breed heavily out of season. Where a colony breeds extensively right up to November, the queen does not again begin to deposit eggs until the bees are flying freely in spring, when there is great loss of life before young ones are hatched to take their place, and spring dwindling is the result. On the other hand, with the brood nest closed down from the middle to the end of September, providing the hive is well stored with both liquid food and pollen, the queen *always* commences to breed about the 'turn of days,' whatever the weather may be, and from that time onwards nothing will check the production of young bees, but the occasional dearth of water, which, however, should be provided against, by supplying all hives with American oil cloth, laid smooth side downwards on the frames.

It does not pay to let the stock combs become stored with what ought to have been placed above. Even supposing we may not lose double the quantity through the brood nest becoming cramped too early in the season, if twenty pounds are found below, this would represent at least ten shillings for extracted: or, if above, quite fifteen shillings for comb honey. What then is gained by such a proceeding, considering also that we are at the same time crippling the strength of our stock for the following year? But, nevertheless, if such honey has not been extracted from the stock combs by the middle of August, by all means allow it to remain there or more harm than good will be done. However, be wise, and add to that store, and induce the bees to breed moderately until the middle of September.

I am quite at one with 'Rector' if he means to say that colonies heavily stored, and which have bred up to September 15th, will give good results the next season with but *little* more care; but, at the same time, I can assure him that those stocks bare of food when the surplus is removed, and which are then judiciously fed as before stated, will do far better.—S. SIMMINS.

ON THE BEE'S STING. [169.]

[205.] Mr. Bird asks me to (1) 'mention one or two instances in which British insects have lost the use of their jaws; (2) have had their wing-cases united after generations of inaction.' The words I used in my paper read before the Association were, however—'The jaws of some insects became aborted and useless by having food prepared for them, and the wing-cases of others became united after generations of inaction.' There is not much difference, but it is best to be exact.

(1.) 'Formica rufescens* is absolutely dependent on its slaves; without their aid the species would certainly become extinct in a single year. They are incapable of making their own nests or of feeding their own larvæ. When they migrate (it is the slaves which determine this migration) they actually carry their masters in their jaws. The masters are utterly helpless, and when shut up without a slave many perished of hunger.' So says Darwin. On page 113 of Nicholson's introduction to Zoology, we are told Formica rufescens are so entirely dependent upon their slaves that they cannot even feed themselves without the help of the latter. Q.E.D. they have lost the use of their jaws, seeing that the rest of their species possess useful jaws.

(2.) Darwin again says,† 'How unutterably inexplicable is it . . . . . that the shrivelled wings under the soldered wing-covers of many beetles should so frequently occur.' And on page 109, 'These several considerations make me believe that the wingless condition of so many Madeira beetles is mainly due to the action of natural selection, combined with disuse.' W. F. Kirby says,* 'The elytra in some cases being either moveable, but of course useless for flight, or soldered together at the suture.' The Carabidæ have moveable elytra, but no wings. The Melæ have no wings, and only rudimentary elytra. Will your correspondent admit the blindness (born-blindness) of fishes found in subterranean waters?

Had we not better promote that fraternal feeling which exists amongst bee-keepers by placing the Bible above a scientific discussion, as its mission is, and was, in another direction? In a controversy of a purely scientific and speculative nature, evidence in support of speculation should be entirely scientific. For instance, I am not disposed to admit the chronology of Genesis and Exodus, nor of the accuracy of the word (translated) 'hornet' in the quotation given. No mention being made of its sting, the insect of that day might use its ovipositor in driving out the Hivites and others, seeing that to-day insects use ovipositors aggressively. Then, again, if Mr. Bird will kindly read the two verses following the one quoted he will find the expulsion was to be 'by little and little, not in one year.' So that the insect alluded to cannot have been very formidable, not more so, perhaps, than the locusts and flies which immediately brought the Egyptians to their senses. Let us please leave the Book tranquil.

Mr. Bird facetiously introduces the stump end of the sheep-dog's tail into the *Journal*. I will leave it there; it wags (stump as it is) against the door of a great argument I should not like to see discussed in your columns—the doctrine of evolution by natural selection.

If I give the perfect-stinged wasp and races of stingless bees can we not conceive of all grades of sting development between these two extremes? Our own honey-bee is eager to use its sting in its Cyprian and Egyptian varieties, passing through grades to the quiet pure Ligurian and almost entirely harmless Carniolan. With a hybrid Cyprian, as perhaps the most vicious, at the top of the chain of honey-bees, and the genus Melipona along with Trigona (both stingless) at the bottom, the humble-bee about the middle, with its curved sting of few and short barbs, may we not fill in a complete gradation of developing, adapting, or aborting probabilities? Just to show how bees and wasps, stingless and stinging, run into each other, I may say that Apis dorsata† 'in form and style of flight much resembles a wasp, is very clumsy in its attempts to sting, and that pain is not so great as that from a common bee-sting.' Again, 'the stings of A. florea and A. indica are very small.'

Mr. Bird, with the caution of a skilled debater, keeps from us his opinions on the subject of my paper, contenting himself by queries, the tone of which (perhaps inaccurately) seems to place him in opposition to my conclusions.

Question A. 'Would it be possible to breed a perfect stinging-bee from a queen of barbless sting?'

Question B. 'And why does A. mellifica require weapons of defence now more than they did in the days of old?'

Question C. 'Have wasps and hornets ever passed through a transition stage?'

Answer A. Certainly, in the slowly grinding mills of the Creator, to whom the few thousand years from the time of the prophets to the present are but as a grain of sand in an hour-glass; but certainly not by the artificial selection of man, who denies possibilities because he is unable to advance by miraculous leaps and bounds.

Answer B. I do not say that they do, though I believe that when animals advance or retreat in the scale of nature the change is constantly going on, from creation to the crack of doom; always some on the bottom rung of the ladder and its consecutive steps; with bees, then as now, varieties being stingless and stinging. Remember the male sex is stingless.

Answer C. I believe they have, though this cannot be more than conjecture by inference.

For the benefit of those who doubt the accuracy of my

* *Origin of Species*, p. 216. † *Ibid*, p. 420.

* *British Butterflies, &c.*, p. 7.
† Professor Cook's *Manual*, p. 33.

deductions I beg to append a few confirmatory quotations. Professor Cook says,* when speaking of the female organs of insects, 'The end of the oviduct called the ovipositor is wonderful in its variation. Sometimes it consists of concentric rings, like a spy-glass, which may be pushed out or drawn in; sometimes of a long tube armed with augers or saws of wonderful finish, to prepare for eggs; or, again, of a tube which may also serve for a sting.' Again,† 'The males (of Mutilla coccinea) are said to sting. This is certainly a mistake. The sting is a modified ovipositor, an organ not possessed by males.' Nicholson‡ states, 'The abdomen of the female Hymenoptera is generally furnished with an instrument connected with the process of laying eggs (ovipositor), and this is often modified to form a sting.' Kirby § says, 'The saw-flies (Tenthredinidæ) derive their name from the horny apparatus of the female being modified into a pair of saws.'—R. A. H. GRIMSHAW, *Crag Hill, Horsforth, near Leeds.*

SUMMARY OF AN AMATEUR'S BALANCE-SHEET.

[206.] In continuation of my remarks in your issue of Feb. 25th, I append a summary, showing my expenses and receipts since I commenced bee-keeping. I make most of my hives and supers, thanks to the hints given in the *Journal*.

1883.

RECEIPTS.				EXPENSES.	£	s.	d.
Nil.				Bees . . .	1	12	6
				Hives, Wood, &c.	1	11	8½
(Cr. by 3 Stocks, Hives, &c.)				Apparatus . .	2	7	6
				Subs. to *Journal* .	0	4	1
				Sugar . . .	0	15	0
				Total .	£6	10	9½

1884.

	£	s.	d.		£	s.	d.
Bees sold . . .	2	0	0	Bees . . .	0	2	6
Honey, 87 Sections @ 1s.	4	7	0	Hives, Wood, &c.	0	19	9
,, 49 lbs. extracted @ 10d. . .	2	0	10	Apparatus . .	2	1	8
				Subs. to *Journal*, &c.	0	11	9
Wax, ½ lb. . . .	0	1	0	Sugar . . .	1	0	0
(Cr. by 4 Stocks and Apparatus.)				Total .	4	15	8
				Profit . .	3	13	2
	£8	8	10		£8	8	10

1885.

	£	s.	d.		£	s.	d.
Bees sold . . .	1	0	0	Hives, Wood, &c.	0	10	8
Honey, 121 Sections				Apparatus . .	2	3	5½
,, 185 lbs. extracted				Subscriptions .	0	9	6
Total 306 lbs. @ 9d.	11	9	6	Repairs . .	0	3	3
Wax, 3 lbs. . . .	0	6	0	Show Expenses .	0	2	8
Prizes, Cash . . .	0	17	6	Sugar . . .	0	11	0
,, Extractor, which is credited with the 4 Stocks and Apparatus.				Total .	4	0	6½
				Profit . .	9	12	5½
	£13	13	0		£13	13	0

The bees sold in 1884 were a stock hive and super; those sold in 1885 were in a skep, presented for managing an apiary during 1884 and 1885, but as the queen died, or got lost, a swarm was given the buyer on July 12th. By adding the profits, it will be seen that I have obtained more than double my original outlay, besides having four stocks and a good supply of apparatus.—GWENYN.

FOUNDATION FOR SUPERS.

[207.] I can fully endorse almost every word Mr. Sharp says with regard to foundation for supers. It is quite true, from my experience as well, that people do not care for sections, &c., that are worked on foundation, and will often complain to the vendor afterwards of the 'hard part' in the middle, and will not purchase any more; but, on the other hand, if, as Mr. Sharp so truly says, the public are offered the *genuine* article, there will be no lack of purchasers. Mr. Simmins seems to think that there is a great loss in quantity by not using foundation freely in supers (and perhaps he may be right), yet the quality will be so *far superior* that the gain which the apiarian will obtain in his price and in the recommendation by his customers will amply make up for the loss.

I think Mr. Sharp's letter on this subject, instead of doing harm, is calculated to do much good, for it will be the means, I hope, of stimulating bee-keepers to produce the real, genuine article, which they can *warrant* as such, and which will greatly enhance its value in the eyes of the public. It is in vain that we sit down and complain of the 'dulness of the honey market' if we are not doing our best to rid that market of all that is inferior and spurious.—THE MANAGER, *North Cornwall Apiary, Rowe, Bodmin.*

* *Manual*, p. 60.
† *Ibid.*, p. 328.
‡ *Introduction to Zoology*, p. 112.
§ *British Butterflies, &c.*, p. 19.

GRAND NATIONAL APIARIAN EXHIBITION.

[208.] It appears we are to have a 'Grand National Apiarian Exhibition' in London this year, and since apiculture in this country is a branch of industry of no small importance (and, growing as it is, we may expect under the improved systems of management a gradual increase in the amount of its productions) I think it only right that it should be represented on all occasions where other branches of industry are exhibited, and the time and place, therefore, for the said G. N. A. E. are well chosen, and its promoters deserve the thanks of all bee-keepers in the United Kingdom, Baroness Burdett-Coutts deserving special praise not only for her munificence, but for the earnest interest she takes in the welfare of bee-keepers generally.

Granted that the Exhibition is to be held, the question arises as to what will be the best means to employ to insure some *real* benefit to the bee-keepers of this country. Are the Colonials going to bring over large quantities of honey, wax, &c., for exhibition only, or are they expecting to increase their sale of honey in this country by making a grand display of their apiarian productions? If so, our exhibits ought to be vast in quantity and superior in quality to show the Colonials that it is not really necessary for them to assist us in supplying the demand for honey, &c., in England at any rate. One would have thought that foreigners, enterprising as they are, and supplying us, as they do, with everything except ready-built houses—and I expect seeing them advertised shortly—would have allowed us the monopoly of our own honey trade, and, instead of bringing their surplus into a country already supplied, have endeavoured to increase the demand in their own. However, they have a perfect right to bring honey just as any other article of consumption, and so long as they can make a larger profit by bringing it into England than selling it in their own country, so long we may expect to see it in our markets.

I am of opinion that the present bee-keepers of the United Kingdom could produce honey enough for the demand of these isles; and if so, why not their produce be bought in preference to any other? The fact is we have been *undersold*, just as has been nearly every branch of industry in this country. The farmer is undersold in his own stackyard, the manufacturer in his own factory, the bee-keeper in his own apiary. Prices have gone down and consequently demand increased, and purchasers are naturally pleased with all reductions, whereas manufacturers and producers generally are somewhat grieved, and, I am sorry to say, in many cases actually *ruined*. Well, Sir, since politics are not allowed to enter your columns, it will not do to attribute anything to our laws even if one wished to do so; and, therefore, I am content to leave politics to politicians, and shall try to consider apiculture as something apart from our laws altogether, and instead of looking forward to our legislators for

assistance, trusting to our own wisdom, energy, and perseverance.

But, Sir, my chief object in writing was to ascertain, if possible, what are the principal objects in view, and what are the means to be employed by the committee for securing some good for our bee-keeping interests?

My humble opinion is that it would not be a bad idea to astonish the Colonials by showing them that our resources are not quite exhausted, that we have got the men and got the honey, too,—not money—and impress them if possible with the notion that there is some danger of their meeting our English agents in their own streets selling English honey to their neighbours. But above all to convince them that we can sell pure honey as cheap as they can; and not only them, but the public generally. Some may not agree that we can sell our honey as cheap as they, but I believe we can, and we shall most certainly have to do so or be driven out of the market to a great extent. I am not referring to adulterated honey. I am afraid I am already trespassing, or else I had intended offering a few ideas with a view to our successful competition with foreigners.—A. Green.

AFRICAN BEES.

[209.] Through the kindness of Dr. Stroud, of Port Elizabeth, South Africa, I have received a nucleus of African bees. Last year I sent him a small Cyprian stock, but unfortunately they died before arrival, and in announcing their sad decease he wanted to know if I would like him to send me a Zulu in exchange. As the season was getting late, and as I had made arrangements for a tour in the Isle of Man, I asked him to send the bees to arrive here about May. But as a well-known African bee-keeper, Mr. J. Harris, of Graaf Reinet, was coming to England, he sent them by him, and they arrived here ten days ago. As the weather was very cold, I left them in their travelling crate till March 17th, when I put them in a small queen-raising hive with plenty of sealed honey.

As I found my other bees were rather too attentive to them, I selected one of my strongest hives, and removed the queen, and caged her Zulu majesty in a pipe-cover cage after some trouble, as she was rather a lively customer. I could not find her in the nucleus, though I looked carefully for her, and when I looked at the hive from which I had removed the queen, I found the Zulu balled on a frame, and when I took her out, she again took wing, and I finally found her on the stand where the nucleus had been placed.

Having caged her for forty-eight hours, I released her, only to find her again balled twenty minutes after, so she had to be re-caged. I will let your readers know how she fares.

The bees are like the Ligurians in colour—three distinct orange-yellow bands; the first, that near the thorax, being much broader than the other two. They are very much smaller than the Ligurians, and the queen looks like an undergrown Ligurian queen.

The travelling crate was a three-frame nucleus, all the combs being carefully wired and protected by half-inch wire netting, the end of the frames being screwed down. At the side was a very ingenious plan for supplying water, by means of sponges in a trough, to which the bees could get access, but so arranged that any excess of water would overflow outside the hive. I propose to show the crate at the next Quarterly Conversazione of the B. B. K. A., and at the 'Colonies' Exhibition, if it can be managed.—Geo. Walker, *Wimbledon.*

KILLING DRONES.

[210.] I have been a bee-keeper of nearly fifty years and seen a marvellous change. Mr. Woodbury, of Exeter, a neighbour of mine, helped us considerably with his Woodbury bar-frame hive.

My object in writing is to say in the *Journal* (which I have been long a subscriber to) that one of my frolics last year was, with two skeps and one bar and frame-hive, to kill every drone in August, and now all three have perished leaving a quantity of honey in all. I am an old man and not able to manipulate as well as formerly, but can say bee-keeping has been a source of pleasure to me always: had for more than forty years from forty-five to six hives, but I am fond of a skep from 18 in. diameter in bottom and a cone top for glass. I have large glasses on my sideboard, several years old, very good. *It is the killing of drones which I want to call attention to.*—Jno. E. Adams, *Bellfield Villa, Kingsbridge, Devon.*

GENERAL MANAGEMENT OF AN APIARY.

[211.] I think that it would be an advantage to many bee-keepers, especially to those whose time is limited, if some simple and easy method could be devised for the general management of an apiary, which could be readily understood, and yet secure the results of more elaborate systems. Several methods have been mentioned in your columns, but all seem difficult and more or less open to objection. Your readers are not likely to approve of the method commended some years ago by a correspondent of a weekly paper, who stated that he kept bees, but that they gave him very little trouble, for he never did anything to them, except twice a-year, when first they swarmed, and he hived them, and secondly he took their honey, and half destroyed them. But when we carefully notice and compare the various methods mentioned in your columns, it is clear that there are considerable differences between them, and it must be difficult for an amateur to decide as to which method he shall adopt. *E.g.*, Mr. Sharp recommends strengthening half the hives of an apiary by adding to them frames of brood, &c., taken from the other half, so as to have the former very strong and ready for early swarming; then anticipating swarming by removing all frames from the strengthened hives, substituting empty frames of foundation, and giving the removed frames to the previously weakened hives; and afterwards destroying all old queens, and cutting out all queen-cells except one, or forming nuclei, according as increase of hives is desired or not. This method seems feasible, but it is open to the objection that it excessively weakens half the hives, and also that the bees, having all their frames taken away, may be driven up with pollen, &c., into the sections; and will not the suddenly augmented hives have to be watched, or in their turn have to be artificially swarmed? Mr. Simmins, again, recommends permitting the bees to swarm naturally, and returning them to their old hives with two frames, cutting out queen-cells from the latter, and subdividing old stocks for nuclei or for increase. Here is involved the trouble of watching for swarms, and the risk of losing them. Another method—practised by a bee-keeper in the north who has been very successful in securing large honey harvests—is to allow his bees to swarm naturally, but he returns them immediately upon all their frames, cutting out all queen-cells, and repeating the process if they swarm again, which he says they seldom do; also always raising a supply of young queens in nuclei formed from his best hive to supply the place of old queens dethroned. But here, again, there is the risk of losing swarms, and the chance of missing a queen-cell. The Vignole method, lately described in your columns, seems to be open to other objections, although I should like to see it fairly tried by some experienced bee-keepers in our land. Is it not possible to devise some simple method which would combine the advantages of all without the disadvantages?—D. A. Doudney, *Ore Rectory, Hastings.*

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[178.] *Swarms or Casts Issuing.*—If you will remove the queen from such swarm or cast at evening, or early next morning, they will return to their parent hive of their own accord.—E. Clowes.

[178.] (W. G. E.)—If you capture the queen with your swarm the bees well soon return to the hive from which they issued; if it is a cast there may be more than one queen, so if after capturing the queen they do not begin to return in a few minutes, search again for other queens. I have found as many as seven queens with one cast, and after they were all captured, the bees soon returned to parent hive, and without doubt related the contretemps, and if 'W. G. E.' should have two or three swarms or casts settle together, if he capture all the queens, they will all return to their respective hives.—Woodleigh.

[181.] (J. H.)—No, not if right materials are used. Very probably the stock has been breeding all through the winter; if so, and considering the large number of bees put into winter quarters, viz., nine frames, crowded, the consumption of food has not been abnormal. It is not much above a pound per week, and with breeding going on that is not a large quantity of food to consume. I don't think the wraps have anything to do with the impoverished state of the hive, as I have proved year after year that those stocks that are most carefully wrapped up consume less as a rule than those not so snugly ensconced in their winter quarters. Some of my best-results hives last year had the chaff cushion on it till I removed them for the crate of sections to take their place.—Woodleigh.

[182.] 'A. P. J.' can make ekes to raise the covers of his hives to give room for storifying crates of sections on top of frames. When purchasers of hives decline buying hives that will not take at least two crates of sections one on the other, then, and not till then, will manufacturers discontinue the present form and size. I, myself, have seen first prizes awarded to hives that had hardly room for one crate and a suitable wrap. I don't blame the judges, as it was the only type of hive submitted to their judgment. But why don't manufacturers launch out into an all-round hive—one suitable for extracting and storifying combined?—Woodleigh.

[182.] *In a Dilemma.*—I should have a frame made of 6-in. by ¾-in. or ½-in. wood, just the same size as the hive body. You can fasten plinths on to the bottom to keep the junction with the hive-body rain-proof, and by cutting the wood a trifle out of square at the ends, so as to make the top very slightly narrower than the bottom, you would ensure the roof fitting comfortably over all. Of course, if the roof is hinged to hive, the hinge must be unfastened.—Trevor Saynor.

[192.] *Fertile Worker.* (A. B. J.)—These do not differ in appearance from ordinary workers.—M. C. H.

[192.] *Fertile Worker.* (A. B. Johnson.)—The fact that 'fertile workers' are so indistinguishable in appearance from ordinary workers constitutes them the pests that they are.—Amateur Expert.

[192.] *Fertile Workers.* (A. B. Johnston.)—These put me in mind of a certain dark-complexioned gentleman, who—we are supposed to know—exists, but whose presence we are only aware of through his works. If fertile workers were recognisable, a hive would be easily cleared of them without the usual means employed.—W. B. Webster.

[193.] *Bees crossing Water.* (A. B. Johnston.)—They have been known to cross water even a greater distance than three miles; but if the honey-crop necessitated such a lengthy and dangerous journey, I wouldn't give much for the apiarian's profits.—W. B. Webster.

[193.] *Bees crossing Water.* (A. B. J.)—Yes, especially if honey was scarce on the north side and plentiful on the opposite, or of a superior quality.—Amateur Expert.

[193.] *Bees crossing Water.* (A. B. J.)—Bees frequently cross lakes when there is a scarcity of bee forage at home, or nearer home, and it is plentiful elsewhere. Bees frequently cross the lakes here, but they are not so wide; but it appears they are too wide, as I have several times been told by the boatmen and others of their seeing thousands on the surface of the water. Those bees are either chilled or otherwise exhausted by their long flights. If you have heather at the opposite side, and none nearer home, your bees will go there.—R. Philipson, *Keswick.*

[194.] *Drone-laying Queen.* (A. B. J.)—More possible than probable. I am rather inclined to the belief that she has been superseded.—Amateur Expert.

[194.] *Drone-laying Queen.* (A. B. Johnston.)—Kill her and introduce another, or unite now, after removing her; she is no good to you. If she has laid only drone-eggs since last July, your colony by this time must be almost valueless.—W. B. Webster.

[194.] *Drone Laying Queen.* (A. B. J.)—You probably gave the queen a squeeze by accident when you were examining the hive, so caused her to become a drone breeder. You should send her to Mr. Cheshire for microscopic examination, as she will probably never recover.—M. C. H.

[195.] *Removal of Fertile Worker.* (A. B. Johnston.)—A 'fertile worker' in a *populous* colony of bees in April would be rather a *rara avis;* such are only to be found in motherless stocks, where there are no means of rearing one. There being little chance of losing a mother-bee before April, your stock, if containing a 'fertile worker,' we might venture to conjecture, must have been motherless for some time, and consequently depopulated to a considerable extent. Unite the colony to one having a good mother bee; you can then divide it afterwards, and provide for either, allowing them to rear; but, better still, introduce a mother-bee to them. There are other means of ridding a hive of these pests, but this way I consider the simplest and best.—W. B. Webster.

[195.] *Removal of Fertile Worker.* (A. B. J.)—Take a frame of brood with adhering bees from one of your best stocks, and place it in an empty hive on the stand now occupied by the stock containing the 'fertile worker.' Remove the last-named stock a few yards in front of its present stand, and turn the entrance towards the old stand on which you have placed the empty hive. Open the stock which contains the 'fertile worker,' use as little smoke as possible, as you do not wish to gorge them, and with a wing brush off *every* bee into the hive from one comb at a time, and carry each comb so treated and place it in the hive on the old stand. It must of necessity be a bright day when bees are flying, and the bees will rapidly fly home to their old home. Leave one comb in the old hive, and the 'fertile worker' will be amongst the very few bees remaining on this comb. These may be shaken on to the ground, and all will probably leave and the 'fertile worker' will perish; and the young bees that were given with the first comb will raise a new queen, or be the most likely to accept a new queen that you may wish to give them. This will apply to both April and July, but we hope you are not troubled with these pests so frequently.—Amateur Expert.

[196.] *Mouldy Combs.* (R. E. Lloyd.)—I should be inclined to melt them down if they were mine; but as you have a number of them spray with phenol solution, and give phenol in the food as well; and if there are degrees of mouldiness amongst them, select the best only.—Amateur Expert.

[196.] *Mouldy Combs.*—If R. E. Lloyd will hang up his mouldy combs for a few warm days out in the air, a little distance from his apiary, the bees will thoroughly cleanse them for him, and the mildew will disappear and they will be fit to return to the hives when required. The combs should on no account be left out at night, and when thoroughly restored they should be stored in a warm room until wanted.—The Manager, *North Cornwall Apiary.*

[196.] *Mouldy Combs.* (R. E. Lloyd.)—Place combs—which you ought to have done when you took them from hive—in a warm, dry place for a week or so; then brush off mould—which will then be powdery—as much as possible, and spray with salicylic acid solution. You can then give them to the bees with safety.—W. B. Webster.

[196.] Yes, give a frame of comb to each of your strong stocks, and they will soon set matters right with your mouldy combs.—Woodleigh.

[197.] (West Surrey.)—About half a pint.—M. C. H.

[197.] *Diluting run Honey.* (West Surrey.)—Much depends on the density of the honey. Try one pint to two pounds, and if it is not sufficiently thin add more.—AMATEUR EXPERT.

[197.] *Honey for Spring Feeding.* (West Surrey.)—About one part water to six of honey. Heather honey being thicker would require more water; use your judgment, and bring it to the consistency of thin clover honey when cold. —W. B. WEBSTER.

[197.] A pint of water will make your honey the right consisteney, or you may boil five pounds of raw sugar in three pints of water, and then stir up in your honey after you have taken your syrup from the fire—you will have a good syrup. Feed with two holes for stimulating.—WOODLEIGH.

[198.] *How long will Bees live without Food.* (West Surrey.)—This entirely depends upon the conditions under which the bees are at the time of their fast; they do not die *en masse*, but to a great extent individually. To enable a correct answer to be given would necessitate such cruel experiments which, considering the absence of any utility in knowing the same, would be unpardonable. Moral: Rather allow too much than too little stores.—W. B. WEBSTER.

[198.] *Bees without Food.* (West Surrey.)—Should not like to guess, not having tried the experiment. Suppose you have a 'Dr. Tanner' contest with one good strong lot and report results to *B. B. J.* if you survive.—AMATEUR EXPERT.

[198.] Not more than a few hours, except sustained by artificial heat.—WOODLEIGH.

[199.] *Extracting House.* (Br. W.)—Much depends on what you can cheaply procure in your neighbourhood. It must be weather-proof and bee-proof, or a portable one of net or wire cloth.—AMATEUR EXPERT.

[199.] *Extracting House.* (Br. W.)—A house about 6ft. square and 7ft. high, frame-work of 2in. × 1½in. quartering covered with ⅜in. matchboards, roof of Willesden card painted white; plenty of ventilators covered with net, is a short description of a house I saw last season which I considered perfection. Don't forget the ventilation. It's rather warm work.—W. B. WEBSTER.

[199.] I should think a small wooden house constructed of light quartering and half-inch matched boards, with sloping roof similar to Irish hive, and with window made to revolve on a centre pivot at top and bottom of sash, when by simply reversing the window all the bees attached to the light would be on the right side to fly, also have the door to open outside like a cupboard, thus economising the room inside.—WOODLEIGH.

[200.] *Holes in Bottles.* (Br. W.)—By means of a glass drill purchased at tool-maker's, lubricated with turpentine. —W. B. WEBSTER.

[200.] A small diamond drill, such as is used by china riveters, or a drill made of old saw file, with point moistened with turpentine, will do; but of course will be longer doing the job. Why not cut a notch in the cork instead of making a hole in the bottle?—WOODLEIGH.

[201.] *Quilts.* (Inexperience.)—When sections are placed in a rack on top of the frames the quilt must be removed. If the rack does not entirely cover the tops of the frames, cover all means of entrance into the sectional cover with strips of quilting, enamel cloth is the best, allowing it to lay under the edges of the rack; the rack then is more easily removed. Drive in the same manner as from a skep. See answer to query (108), 18th February.—W. B. WEBSTER.

[201.] I should advise the removal of the quilt when the crate of sections is put in, but if 'Inexperience' intends using the Benthall or Raynor crate, he can cut a long square hole in his quilt. And again, why drive your bees from your box-hive? Let your bees swarm naturally, hive in frame-hive, stand same on old position, and move your box-hive to a new position, when your bees with nearly all of the fielders will go back to old stand, thus making your new hive stronger, and also giving good chance of an abundant produce.—WOODLEIGH.

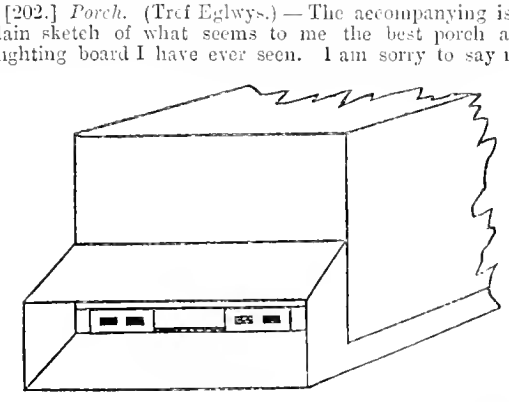
[201.] *Quilts.*—(1.) Certainly use quilts; I find that by wrapping them up warmly, the bees store and seal the honey much faster in the sections. (2.) I suppose you mean a hive in which the combs are immoveable; in this case proceed as you would with a straw skep, only you will have to drum on the sides of the box with sticks so as to shake the combs sufficiently to make the bees run.—M. C. H.

[201.] *Quilts.* (Inexperience.)—If you have excluder-zinc, relegate it to the limbo of antiquated appliances, and take a good *thin* quilt, and cut it so that it only covers, say, eight out of ten frames, and place your super on the quilt and try results. *Driving Bees from Box.*—If you simply want a swarm, treat the box as you would a skep; if you wish to empty the box, *bump* and treat as you would a skep. —AMATEUR EXPERT.

[201.] (Inexperience.)—Leave one layer of quilt between hive and super, out of which cut a strip about an inch wide near to each side of hive, or back and front if frames are at right angles to the entrance, and extending across as many of the bars as the super will cover, in which case the queen is not so likely to enter super as when the quilt is entirely removed. Two or three layers of quilt should be put on top of super, carefully tucked down, so as to keep all snug and warm. The best way to get bees out of a box-hive is to invert the hive, and then, with a sharp turning saw, cut out one side. The combs can then be readily cut out, and the bees shaken off. A little smoke will keep the bees quiet while the turning operation is being performed. —A. SHARP.

[202.] (Tref-Eglwys.)—A catalogue of any appliance manufacturer will give you the information you require.—W. B. WEBSTER.

[202.] *Porch.* (Tref Eglwys.)—The accompanying is a plain sketch of what seems to me the best porch and alighting board I have ever seen. I am sorry to say my



hives are not so fitted, but one of my most successful friend's hives are; they are in a very exposed position on the top of a hill. He is an amateur carpenter and makes his own. The sketch needs no dimensions.—AMATEUR EXPERT.

[203.] *Mouldy Combs.* (Nucleus.)—The bees will clean slightly mouldy comb; remove same, the bees evidently do not cover it, and it is desirable now to remove all unoccupied combs. Dampness is the cause; outside combs frequently get into this condition during the winter months from the condensation of the atmosphere, produced by the warmth of the cluster. 2. *Croaking Noise.*—Perhaps you leant against the hive and so produced the noise; bees do not croak.—W. B. WEBSTER.

[203.] *Mouldy Combs.* (Nucleus.)—(1.) Dry pollen invariably turns mouldy during winter, in the dryest hives. The bees will clear it out. Bees also store pollen mixed with honey, and seal it over; this does not turn mouldy, and, I believe, is invariably used for early breeding. (2.) *Croaking Noise.*—Do you mean 'piping;' it is the only croaking noise I have had the pleasure of hearing?—AMATEUR EXPERT.

[203.] 1. The bees will attend to the cleansing of comb and removal of the dry mouldy pellets of pollen. 2. Possibly the burr caused by wings of bees touching some substance.—WOODLEIGH.

[203.] (1.) *Mouldy Combs.*—I should advise 'Nucleus' to remove his outside mouldy comb on the first warm day, and to hang it out in the air (see answer to Query 196). If the mildew from this comb filled with pollen does not disappear after this process has been tried, it is better to

destroy it, as it would be unwise to return it to the bees. (2.) *Croaking Noise.*—I have very often heard this in my apiary, especially in the summer, and last season it was so peculiar and audible in two of my observatory hives that I determined to find out the cause, and after long, careful, and very minute watching I found it was made by a drone. Has 'Nucleus' any drones left in this hive he speaks of?—THE MANAGER, *North Cornwall Apiary.*

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[212.] *Boiling.*—Can syrup for spring stimulation be made without boiling? If so, how?—J. C. B.

[213.] *Curing Dysentery.*—What is the best way of curing dysentery in skeps?—YOUNG BEE-KEEPER.

[214.] *Dysenteric Bees.*—What should be done with frame hives that have had dysenteric bees in them?—YOUNG BEE-KEEPER.

[215.] *Skeps.*—Would it be practicable to work skeps for extracted honey by using boxes nine inches deep, to fit over the skep, and using frames six inches deep and a wood or zinc cover?—YOUNG BEE-KEEPER.

[216.] *Ligurianising.*—What is the best way to Ligurianise an apiary of, say, fifty hives, as early as possible, without interfering with the honey-harvest?—F. A. W.

[217.] *Stinging Gloves.*—Is any means known by which bees may be prevented from stinging gloves worn by a manipulator? I find that it is pleasanter to wear gloves than to be without them; but it is grievous sometimes to see, when once a bee has fixed its sting in one's glove, the poor creature wriggling about in agony, and, perhaps, many others following its example. Could not the outer gloves be dipped in some chemical solution distasteful, or *tasteful*, to the bees?—RECTOR, *Ore, Hastings.*

[218.] *Drones—Ligurianising.*—(1.) When do bees cease rearing drones? (2.) Would it not be better to purchase two Ligurian queens after all drones are reared and the swarming season is over? (3.) If a Ligurianised hive swarms, would not the purchased queen accompany the swarm? If a young Italian queen is left in the hive is she worth keeping, as she would meet black drones?—VICTOR.

[219.] *Obtaining Honey.*—Is a hive with about twenty frames the best for obtaining honey in sections? or would a two-storey hive, holding altogether the same number of frames, be better.—M. C. H.

[220.] *Honey-comb Designs.*—How long is it since honey-comb designs were first introduced? and to whom are we indebted for the invention of letter-printing and other artistic designs wrought out by bees?—APIS.

[221.] *Disinfecting Skep.*—What is the best way to disinfect a skep with 12 or 14 lbs. sealed honey in, the bees dead, and signs of dysentery? and would there be any risk in putting a swarm into it in June?—VILLAGER.

Echoes from the Hives.

East Yorkshire.—As I seldom see any report from this district, perhaps a few lines may be worth inserting in the *Journal*. After one of the most miserable summers experienced for many years, we are now having a most protracted winter. Frost and snow set in here the first week of the new year, and has continued with but slight intermission ever since, until we now find ourselves in the middle of March with snow still deep on the ground. I need scarcely say that such a long period of low temperatures has had a very injurious effect on the bees, at least it has had on mine. I entered winter quarters with forty-six hives all told; about eight of these were nuclei in make-shift boxes, but the great majority of them were very strong colonies, and ten of these were left with all the body boxes of their hives full of honey, just as they came off the moors; these were intended as a trial against others with reduced combs as usually recommended. Others are strong lots of driven bees fed entirely on sugar syrup. So far my casualties have been three—one of them I found out to be queenless when too late; another died in the midst of plenty for want of passages through the combs; whilst the third, a grand lot, were victims to the weather, the hive-cover and quilts being blown off during a heavy storm of wind and rain, and when I found them the hive had two inches of water in it and all the bees and combs exposed. I put them into a new hive, but they never recovered. To return to the weather. This long confinement of the bees has brought on an attack of dysentery with more or less severity in some colonies, without apparently any regard to the condition of them, but solely, as far as I can judge, owing to the position and aspect of the hives. Mine face either due south or due east, about equally divided as to numbers. Now, not one hive facing south is affected with dysenteric symptoms, whilst a large number of those facing east, I am sorry to say, are. How is this? It is easily explained, and shows that the aspect of hives is of more importance than is usually thought to be the case, and especially in exceptional seasons. During this protracted cold weather we have had on two or three occasions just enough sunshine to raise the temperature sufficiently to induce the bees to take short cleansing flights, but these glimpses have generally taken place about noon, when the sun's rays did not strike the fronts of those hives facing east, so that these colonies lost the opportunity of flying and are in consequence suffering from dysentery; and numbers of bees, with their abdomens distended, are vainly endeavouring to fly, or are tumbling out of the mouths of the hives on to the snow and perishing. What can be done to save them? Nothing—warm weather and the melting of the snow alone can save them. The confinement in their hives has been longer than they can bear, and if prevented from coming out they will die indoors with worse consequences. A few days ago the sun broke out in earnest, and I saw the bees would soon be out, as it became quite warm and the snow began to melt. I made no attempt to shade the hives, but allowed the bees to have their own sweet (?) will. The result was a sight not often witnessed; they came out in thousands and fairly covered the snow with their fæces until it was tinged all round of a mahogany colour. Hundreds perished in the snow, melting little holes as if a walking-stick had been thrust into it; and though this apparent waste of bee life was grievous to see, I am convinced that the result would have been worse had they not been allowed to come out. It is snowing again whilst I write, and I fear we have not seen the worst.—F. BOYES.

The Apiary, World's End, Newbury.—Bees out on Thursday, 11th inst, for an hour or two in middle of the day, and one little solitary crocus—first harbinger of spring—opened its golden cup, soon to be revelled in by the busy bee. I sprinkled some pea-flour in the crocus blossom and around on the grass and very soon the bees were rolling themselves in it and going home as dusty as millers.—W. WOODLEY.

Winterslow, near Salisbury, March 19th.—At last we have a mild day, and bees from all my ten hives were enjoying themselves right merrily in the sunshine this morning. I have lost none, and all appear healthy, but I have not yet examined them; as it has come on raining now, and I know they must have plenty of stores. The only days on which they have been able to fly freely this year have been January 2nd and February 12th.—C. W.

North Leicestershire.—On Friday, 19th inst., a sudden rise in temperature set the bees at liberty once more. On the following day they were carrying in pollen all day from aconites, snowdrops, and a few early crocuses. Scores of *young* bees perished through alighting on the cold ground just freed from snow. The following extracts from Dr. Emmerson's diary gives a good idea of the general state of bee matters: 'March 21st, hive No. I, Swarm of 1885.—

Seven frames well covered with bees, brood in all stages on two combs, stores in four frames. No. 2, old stock which swarmed and cast in 1885.—Ten frames crowded with bees, stores in seven combs, sealed brood in three combs; no eggs, no unsealed brood, and no queen observed in cursory examination. A fortnight previous this stock had a grand turn-out. Was queen lost then, as there were several queen-cells? one of quite recent build with jelly in it. No. 3, observatory hive.—Bees covered four bars, one comb of brood and eggs, and one with eggs only, stores in six combs. No. 4, skep.—Bees carrying in pollen. No. 5.—Seven frames well covered with bees, a large amount of stores in six frames, brood in all stages on one comb.'—E. B.

Chippenham, March 20th.—Yesterday a magical change in the weather took place here. The icy grip of winter suddenly gave way, and the thermometer rose twenty degrees in twenty-four hours. My hives soon presented a lively scene. My heart rejoiced to see the bees turn out in such strong force, glad, no doubt, to get a cleansing flight, which they much needed. The fields are quite bare, not a blossom to be seen, and only a snow-drop here and there in sheltered gardens; but a few of the bees found forage somewhere, and returned with their first load of pollen, showing that breeding had commenced in the hives.—W. A. Warrilow.

Odcombe, Ilminster, Somerset, March 20th.—The long spell of bitterly cold weather has now given place to some splendid mild weather, of which the bees are taking full advantage and are cleaning out the hives in earnest. I do not think there is much pollen to be gathered in this part, and I am supplying pea-flour, strewn on tiles, first damped with syrup, with which they appear very glad. I put twenty-two stocks into winter quarters and all appear now very strong and no trace of any disease. One lot, driven at the end of September, I put into a small single-walled hive of ¾-inch wood, not even painted, with two combs of sealed honey and five empty ones. To-day I have transferred them to a new hive on five combs; they have brood in all stages. I put this lot away as an experiment, and quite believed they would not survive the late severe weather.—J. Sarell.

Keswick, March 20th.—The weather here has been something similar to other counties; by other reports perhaps more severe. We had here close on three weeks' frost, and it ranged from 10° to 26°, and on the 1st of March it snowed from Monday till Tuesday evening, and scarcely ever ceased. All the lakes in the district have been frozen over since March came in, and at times it has been very warm in the middle of the day and very tempting to the bees. On Friday the 5th I had not my hives shaded, and they came out in thousands and many never to return; since then I have had them shaded at the entrance with old sacks: I find that darkening the front of hive in this way answers better than a board or slate. Bees' forage is going to be late. Crocuses are only just above ground, arabis is looking very dull, palms are five or six weeks later than last year, and my bed of wallflowers are all killed with the frost. But now the main object is the bees. I am unable to say further than that they are all alive, as they made their appearance on the 19th, and brought their dead out on to the flight-board. But how they are situated for food I am anxious to know, but I dare not examine them till the weather is more suitable. Many of them will have sufficient food, yet, as I did not put them into winter quarters with a stinted number of frames of combs, as I have done other winters,—I suppose this is rather on the let-alone system, but I do not believe in let-alone when breeding gets fairly started. As soon as suitable weather comes I shall encourage breeding and other necessary means to help them forward.—R. Philipson.

Chester, March 22.—What a climate! A week ago and everything was frost-bound. Yesterday the bees were revelling in glorious sunshine, carrying in pollen to their hearts' content. Numbers in some cases sadly diminished. Now for a little gentle stimulation with rather moist candy, syrup later on.—Chas. Roberts.

Bishop's Waltham, Mar. 22.—At last, after a long spell of severe weather, we have had two days on which the bees have been able to take a cleansing flight. On Sunday, the 21st, and again to-day, my bees have been out quite strong, and I am glad to say that out of my nine hives all appear to be fairly strong and in good condition except one, and this I fear I shall lose through dysentery. The hive is one I bought in the winter, and I fear was not carefully packed, &c., for winter. Last week on a warm day I looked over some thirteen or fourteen hives, with the result of finding them, I am glad to say, in fairly good condition, and in two or three cases there was a nice lot of brood. But in nearly the whole of the cases feeding must be carefully kept up, for, after the long winter, the stores were nearly exhausted.—A Hampshire Bee-Keeper.

Alfriston, Sussex, March 22.—On the 19th we had beautiful warm weather; bees were flying as if it were swarming time. I examined a bar-frame hive, and found brood on four or five frames with plenty of honey. Some of my skeps are rather lighter than I would wish them to be, but I shall commence feeding in a day or two. I have heard of two hives being starved, one a straw skep. I examined afterwards and found no comb in it, only a few dead bees; a fortnight before it had got a nice lot of honey in it. I think that somebody helped themselves to it.—A.

Leamington, 22nd March.—At last the change in the weather has come; and haven't the bees enjoyed it? Yesterday I scarcely remember ever seeing so many on the wing at this time of year; it appeared as though they were all bent on turning out, and in the rush many young bees were knocked down on the cold, wet ground, where they became chilled. Having a lot of crocuses, they were in and out of them to such an extent I never saw before; I counted about eight in one bloom, and many others were the same. It is to be hoped the bitterness of this year's wintry weather will not return.—John Walton.

Ottershaw, Chertsey, March 22.—My bees up to the present are doing well, and most cottagers I can say the same of. Last Thursday and Friday was a treat to see them. We have Erica carnea and Erica codonoides in full bloom, and they gathered from it by hundreds.—Fredk. S. Fletcher.

Lismore, Ireland.—Very cold weather, and a most unusually severe spring for the south of Ireland. In the last fortnight the bees were only out in any numbers on two days. There is plenty of sun, but a perishing cold wind, and the mountains covered with snow. To-day, March 16th, is sunny, with a north-east wind of the most cutting description.—Irish Novice.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Rev. — Routh.—*Bees, what Race?*—The bees forwarded are as entirely black as will now be found. The traces of foreign blood are only to be observed after critical examination.—F. C.

Inquirer. — *Bees Diseased.* — A parcel of bright-looking dead bees, including the queen, have been sent me for examination in order that I may report upon the case and state the cause of death. In the absence of any information, beyond that obtainable by microscopic examination of a few specimens which may or may not correctly represent the condition of the whole population, the question is, perhaps, too exacting, but yet sufficient is evident to point to a few particulars touching all interested in wintering. The bees are in some cases apparently diseased. The blood of fifteen was examined, and in four bacilli abounded. A trace of the blood containing bacilli from one worker I placed in a sterile culture tube on Saturday morning, and now (Monday) I have a beautiful crop of short definite forms, certainly neither alvei nor Gaytoni, and presenting peculiarities of a remarkable kind. (It is worthy of note in a parenthesis that in some respects Bacillus alvei is more extraordinary than any bacillus known to science, and that

through it two or three moot points have been settled.) But to return: Have we here a new bacillus? Possibly not. As the bee was not living at the time I received it this bacillus may be merely putrefactive and not pathogenic in character, *i.e.*, it did not attack the bee until after its death, of which clearly it could not then be the cause. This matter can be cleared up, and I intend following it, but it will involve no little labour, which would have been saved if the bee had reached me before death. Correspondents will, therefore, kindly, when possible, forward living bees only, and for these a Benton travelling box is not to be beaten. These bees had not died of starvation, as sugar was found within each, and in most cases large crystals of cane sugar were visible. This would seem to indicate rapid autumn feeding with insufficiently boiled syrup, to which little or no acetic acid (vinegar) or tartaric or citric acid had been added. The crystals may have formed in the bodies of the bees after death in consequence of low temperature throwing the sugar out of solution. A thin hive permitting the persistent cold to chill the bees below the point at which vitality can be maintained may have brought about the fatal result. This winter will, I apprehend, do something towards exposing the fallacy that thin hives are equal to thick ones, but in making comparisons, of course, all the circumstances will have to be considered. That we have now before us twelve or fourteen disease organisms furnished by the bee-hive should not disconcert bee-keepers. Their discovery does not add to their destructiveness, and it may be the means of ridding them of their terrors in every case, for it is reasonable to conjecture that, since all these organisms are near relatives, what will destroy one will destroy the others, of which we have so far a corroboration in the case of B. Gaytoni, which yields to phenol, although it seems to be especially likely to attack the queen. In conclusion, I must add that correspondents ought not to expect private replies from me, but if they do they should enclose a directed envelope. As I am willing, in the cause of science and apiculture, to incur so much expense and to give so much time and attention, it is at least fitting that I should be saved needless trouble. Living bees in a Benton box, with a description as short and complete as possible, will never be neglected, and when anything is ascertained a reply in the *Journal* is all that I can promise. That valuable progress, if I am assisted thus, will be made is certain. A new point of great moment with regard to Bac. alvei has presented itself, and seems to promise a way of disinfecting combs which will greatly assist the bee-keeper.—Frank R. Chesmire, *Avenue House, Acton, W.*

Irish Novice.—*Doubling.*—You can use the board as you propose, but we do not see the use of it. We never use excluders or anything between the two hives. We hope next week to be able to give full instructions for working on this principle. We use the ordinary quilt, and have a cover over, and allow a free circulation of air outside. Raise the hive an inch off the floor-board in front, and this will give the bees plenty of ventilation. Do not trouble about the queen ascending, but give a third or even a fourth storey, if necessary.

A. B.—*Using Hives without Distance Guides.*—Probably your hive is constructed for broad shoulders, as on page 27, *British Bee-keeper's Guide Book*. On page 26, you will see a section of hive used with frames without broad shoulders. To adapt your hive to this style you would have to nail strips of wood on the outside to come level with the top and enclose frame ends.

H. A. Perkin.—The exigencies of our *Journal* prevent us from carrying out your suggestion, though we would fain do so if we could; perhaps in time we may be able to accomplish it.

F. A. W.—1. *Bee-houses.*—Consult Mr. Raynor's pamphlet on Bee-houses; also Root's *A B C of Apiculture*. 2. A larger size of bees might be a doubtful advantage.

R. E. C.—Your suggestion has already received our very careful attention, but we are unable to undertake it.

A. B.—If there is space in your garden, there is no objection to your having poultry and bees there. Sometimes, when too neighbourly, the poultry will snap up bees; and on one occasion in our own experience, the bees attacked a brood of chickens and stung six out of seven to death.

Inquirer.—The drones forwarded have been hatched this season.

Baillie.—The Secretary of the North of Scotland Apiarian Society is Mr. Finlayson, of Aberdeen.

Col.—1. *Tin Separators.*—You can get tin cut to your size at any ironmongers, or almost any hive dealer can supply you. 2. *Size of Sections.*—By far the greater number of bee-keepers use $4\frac{1}{4} \times 4\frac{1}{4}$, and *if* any standard is adopted, it is more likely to be that than $4\frac{1}{2} \times 4$. 3. The bees forwarded appear to be blacks. We cannot, however, judge from one or two bees whether a stock is of pure race or mixed, as, if mixed, some bees will be quite black, others as yellow as pure Ligurians, and others slightly yellow. You can judge better yourself by observing them. 4. *Stimulation.*—Begin at once, and continue gently when commenced, not by fits and starts.

C. W.—1. The sample of American cloth is suitable for use with Simmins' dry sugar feeder. 2. The sugar forwarded does not appear to us to be either too hard or too dry to be used for dry-sugar feeding, and it would be suitable to make into flour-cake mixed with pea-flour. 3. *Spring Stimulation.*—Flour cake is the best while the weather is likely to remain cold and uncertain, as the bees can obtain the all-necessary food for the brood without leaving the hive. 4. *Doubling.*—If you can get eight frames crowded with brood and bees fly 1st May in each of the hives, double at once, and so get fruit blossom honey. If, however, that source is past, or nearly so, by the time your stocks are ready to double, let them go on increasing until just before the next honey flow commences, and then double.

R. C. Willis.—*Beginning Bee-keeping.*—We advise you to begin with a simple frame-hive containing ten or twelve standard frames. Such a hive may be purchased for 7*s.* 6*d.* or up to 15*s.* A lesson or two from an expert will be of advantage in teaching the manipulation, which is easily and quickly learned. To a cottager who has little spare time and less understanding, we should recommend the skep, but not to an educated person. Apply to Mr. Huckle for the 'leaflet' *How to Commence Bee-keeping.*

R. L. Richardson.—*Decoy Hives.*—We believe there is in existence an old statute which has never been repealed that renders the placing of hives in a garden as decoys for a neighbour's bees penal. It is a very dishonest practice, but one which, in our own experience, is constantly made use of. If the brace-combs are in a frame-hive when manipulating, cut them all away; if in a skep, it is best to leave them.

We have received from C. G. Harrison, of Halesowen, Worcestershire, his price list of hives and bee-keeping appliances. This catalogue is very comprehensive, and the various hives and other bee-gear are marked at very reasonable prices. We note some well-designed zinc covers for hives, which would secure the desired dryness of hives.

Received from W. T. Falconer, of Jamestown, N.Y., his catalogue of apiarian supplies. Mr. Falconer's speciality is his Simplicity hives, his one-piece sections, and the Vandervort foundation.

Cambridge in New Zealand.—'The food was tolerable; we found for one thing New Zealand honey especially excellent, taken from the nest of the wild bees, which are now in millions all over the colony. They are the offspring of two or three hives, which were kept, when I was at Oxford, in the rooms of Cotton,* of Christchurch, between whom and his bees there was such a strong attachment that a bodyguard of them used to attend him to lecture and chapel [?]. Cotton went to New Zealand with Bishop Selwyn, and took his bees with him, and they have multiplied in this marvellous manner.'—From *Oceana*, by J. A. Froude.

* The late Rev. W. C. Cotton, of Frodsham, Cheshire, author of *My Bee-Book*, &c.

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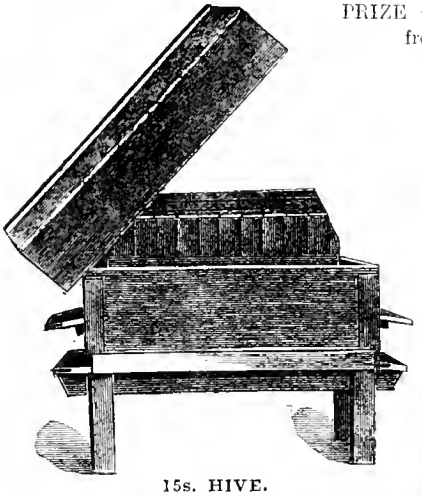

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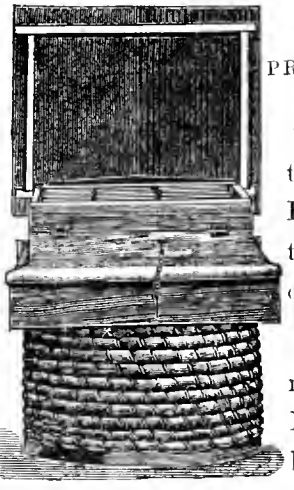

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Editorial, Notices, &c.

DOUBLING FOR EXTRACTED HONEY AND PREVENTION OF SWARMING.

In order to succeed in producing extracted honey the method adopted must differ considerably from that recommended for honey in sections. Opinions may differ as to the relative values of extracted and comb honey in different localities, but the bee-keeper must consult his own interests and produce that which he finds most saleable. We have successfully produced both and have never had any difficulty in selling either, but we have been forced to the conclusion that if we were going to make a business of it and produce honey in large quantities, we should certainly give the preference to working for extracted honey. On the whole there is very much less work connected with its production, also the quantity of apparatus is considerably reduced and it is of a simpler kind. The principal part of the work is done in spring and autumn, and during the swarming season we are comparatively free; and now that by doubling we effectually prevent the bees from having any desire to swarm, much time which would be otherwise idly spent by them is turned to good account and with profit of the bee-keeper.

To get the largest amount of extracted honey we must have—

1. Strong colonies.
2. Young and vigorous queens.
3. The power of preventing swarming.
4. Hives large enough to allow of the full development of the colony without creating a desire to swarm.

In order to get colonies strong, the bee-keeper must be regulated by the time of the great honey flow in his district and commence preparing his hives six weeks before. It is absolutely necessary that there should be an immense population directly the honey harvest commences, and it is well known that one strong colony will do better than two weak ones; we must, therefore, endeavour to get each individual colony strong. We do not recommend more meddling with bees than is absolutely necessary, and the object of moveable comb hives is to enable the bee-keeper to manipulate his hives only when absolutely necessary. Many do so a great deal too much, and at times when very much more harm than good is done.

We have advocated stimulation and spreading the brood, and have practised these for upwards of fifteen years with great benefit to ourselves, but both these operations require some judgment, otherwise their object is not accomplished, and instead of strong hives the bee-keeper will find to his mortification that they will be suffering from *spring dwindling*. A celebrated painter was once asked what he mixed his paints with to produce the wonderful effects he did. His answer was, 'With brains, sir;' and so it is that brains must be used to produce the wonderful effects obtained by stimulation and spreading brood.

To a certain extent we are restricted to the size of our hive by the size of our standard frame, and the hives we use contain ten frames and division board, but when this is removed one more frame can be put in, making in all eleven frames, which are placed 1⅜ inches from centre to centre. Our bees winter in one of these hives, but then the combs are placed from 1⅜ to 1¾ inches from centre to centre, and if properly prepared for wintering in the autumn, by the middle of March we usually find enough bees to cover about eight combs.

In different localities the honey harvest begins at different times, but we take as an example a district where it commences at the end of April or the beginning of May. At the middle of March, when we make our inspection, the outside combs not covered with bees are removed and the remaining combs are closed up by division boards in such a way as to rather crowd the bees. We generally find that, by this time, the bees have already brood on three or four of the frames. We encourage the extension of this by uncapping some of the sealed honey cells and the bees are not disturbed again for a week. The examination of the hive and uncapping the honey cells will have the effect of stimulating the queen to lay: and at the end of the week when the next inspection is made we shall be agreeably surprised to find that the brood has increased considerably. We then examine the combs containing brood, and may possibly find it is all at one end of the combs, and if this be the case every alternate comb containing brood is turned end for end and the hive left for another week. At the next examination it will be found that the brood has still further extended, and that not only are the frames which contained brood nearly covered with it but that the queen has also been laying in those combs on either side of the brood-nest. We then make the combs containing the most brood, and which are in the centre, change places with those containing the least brood, and in this way examine the hives and change about the frames every four or five days until every comb is filled with brood in every part from top to bottom bars of the frames. Of course, if the bees are short of food, as they are most likely to be, they must be fed with syrup.

If there are not enough bees to cover eight frames they must be crowded upon as many only as they can occupy: and as at this time of the year there is danger

from cold we take care that not only are there enough bees to cover every comb, but that they overflow beyond the division-boards into the space containing our spare combs. With this object in view we make our division-boards to reach to within half-an-inch of the floor-board, and when the weather is warm the bees pass under this and fill the space more or less, but when it is cold they return to the brood-nest and protect the brood. If there are sufficient bees to do this—and the intelligent bee-keeper will always take care that there should be—there will be very little danger of the brood becoming chilled. As soon as all our frames are filled with brood in every part of the comb we move the division-board and place one of the spare frames in the centre.

By this time young bees will be hatching out rapidly, and the hive should be full of bees and there should be brood on every one of the eleven frames by the commencement of the honey harvest. We are careful to keep our frames 1¼ inches from centre to centre, and thus prevent any attempt at raising drones.

As soon as the honey harvest commences we proceed to double our hives, and there are two different ways of doing this. One consists in selecting two strong stocks and from one of them remove all the combs, shaking and brushing the bees back into the hive. These combs, full of brood, are placed into an empty hive on to the top of the other stock and form a second storey. The lower hive being crowded with bees and the weather warm they immediately ascend and take care of the brood.

Quantities of this will be hatching out daily and increasing the population, whilst every cell, as it is vacated, will be filled with honey, which as soon as capped can be extracted. Although we were amongst the first to use and advocate excluder zinc when working large supers, we have long since discontinued to employ it, as we found that it interfered with the work of the bees, and that we always got much more honey without its use than with it.

We do not mind the queen ascending even to lay, and we have not, for extracted honey, got to consider the appearance of the combs, as those that have been bred in are even better and stronger for use with the extractor than new combs which are more liable to break.

Another plan and which gives us still better results, and has enabled us to get 1360lbs. of honey from seven hives in one season, is by piling three or four hives one upon the top of the other, only one set of brood combs being used to start with.

(*To be continued.*)

USEFUL HINTS.

Since our last 'Hints' a most agreeable change in the weather has taken place—a change from piercing cold to abnormal warmth — which, however trying to the human constitution, seems to have admirably suited our insect friends. The loss of bee life in many districts, we fear, will be found enormous, as we are not unfrequently accosted with such salutations as 'All dead, sir,' or 'Only one or two left and they very weak'—the result, no doubt, of imperfect winter preparations, or total neglect, nevertheless to be regretted as terribly discouraging to the tyros in the art. All—or nearly all—our 'Echoes from the Hives,' Mr. Editor, are of the most encouraging description, and we rarely see losses, and unfavourable items, there described. Is it that such never occur? or are the spectacles of the writers slightly tinged with *couleur de rose*, as your own were were said to be on a certain recent occasion? Could you not, sir, establish a 'Blasted Hopes Column,' after the example of your contemporary *Gleanings?* It would certainly be consolatory to some of the unfortunates to know that others had suffered losses as well as themselves. We fancy that even you, sir, will not maintain that art and science have rendered the system of apiculture, under this 'vile climate,' so perfect that, even in the hands of experts, losses never occur. Pray, sir, consider our suggestion.

Robbing has been very prevalent since the fine weather set in, so much so that it has been impossible to open hives during the daytime. Continue to manipulate in the evening only. However bright the day, bees at this time of year cease to fly about 4 p.m. when operations may at once commence. All entrances should have been closed ere this to one bee space only. Inadvertently we omitted to reduce the entrances to one of our strongest hives, which was immediately attacked, and the queen encased and destroyed before we could rescue her.

Enamel Cloth.—Our hives experimented upon with this as a winter covering have come through the winter well. The strongest colonies are in a perfectly dry condition with no sign of dysentery. A few of the less populous ones have their outside combs slightly damp and discoloured, but those occupied by the bees are dry and clean, and the bees are active and healthy. Those colonies under carpet or felt have not wintered nearly so well. Consequently we shall in future adopt, as winter covering, the enamel cloth. If bees can pass well through a winter, in which they have been closely confined for three months to their hives under enamel cloth, *à fortiori* they will winter still more successfully during a mild season.

Feeding.—Continue to feed regularly all colonies which have consumed their winter's supply, of which not a few instances will be discovered by the careful painstaking apiarist. The drain upon the stores of strong colonies, breeding extensively, is enormous. For such colonies we prefer food of the winter consistency for the next week or two. Crocuses and snowdrops are at present our only flora yielding pollen, but soon the elms and willows will supply their place.

Uniting.—Where necessary—as from loss of queen, &c.—unions should be made at once. The following method of uniting queenless colonies with colonies which possess queens has been recommended:—Remove the queenless hive from its floor-board, and place it on the hive which contains a queen, with a sheet of zinc excluder between the two, closing the entrance to the upper hive, and giving a little smoke at the top of the upper, and at the bottom of the lower hive. The operation must be performed in the evening, when the bees have ceased to fly. Leave the hives in this position for twenty-four or forty-eight hours, by which time the bees will have united peacefully. If, on removing the upper hive, bees are found upon the combs, brush them off on to the lower one, having previously removed the zinc. We have operated successfully on this plan without using zinc excluder, and have never lost a queen.

Queenless Colonies are likely to be more numerous, after the late trying winter, than many apiarists suppose. An examination, therefore, is desirable, and where such are found, as a rule, it is best to unite them to others, fairly strong, and possessing a queen. Delay in such cases is serious, since queenless colonies dwindle rapidly, and encourage robbing and commotion in the apiary. If a queenless colony, however, be strong, possessing brood, it may prove advantageous to introduce a queen, caged upon a frame of brood, in which case she will usually be favourably accepted after twenty-four hours.

Comb-honey.—'Taking one year with another, we get from two-thirds to three-quarters as much comb as extracted honey, supposing that we adopt the best known methods in both instances. Whatever prices the two honeys command, at those prices comb sells more promptly. Not only in quality, but in appearance, it really has no competitor. To the *taste*, syrups, butter, sauces, may ask for competition, but for the eye—for a table ornament—no edible dare presume to compete with comb-honey. The labour connected with the production

of extracted honey must, almost all, be performed out of doors, amongst the bees, at a busy season of the year, by skilled help. Not so with the production of comb-honey. Sections and crates can be made, foundation adjusted, surplus cases all fitted for the hives, by cheaper hands, in cheaper times. The same is also true of cleaning and crating the filled sections. All can be done indoors, at chosen times, regardless of weather. Surplus comb-honey is handled by cases, not by sections, and there is not more than one fourth of the amount of out-door labour connected with the production of comb-honey, as compared with extracted honey.—James Heddon, *Canadian Bee Journal*.'

The above remarks appear to us reasonable and true, and we recommend the careful perusal of them to our readers, at the same time reminding them that now is the time for preparing 'sections, crates, foundation, surplus cases, &c.' Very soon the busy time will be upon us. As regards the *quality* of comb-honey, in a long experience, we have invariably found that gathered in May, June, and the early part of July, the finest in quality, *i.e.* in colour, flavour, aroma, and general appearance. After the latter date, as a rule, the colour is much darker, and the flavour inferior. The late gathered honey, therefore, even from sections, is extracted, with us, and put to inferior uses. Its market value is barely half that of good sections. So far have we digressed from our usual routine, impressed with the importance of the subject to apiarists in general.

Things in General.—Do Italian bees, Syrians, and Cyprians, collect honey in quantity from red clover? We have proved to our satisfaction that they do, although many deny the fact. Mr. Vandervort, an American apiarist, has made a statement to the effect that fifty Italian colonies of his gathered at least 50 lbs. of honey per colony solely from red clover, while the black bees did not gather an ounce. We have found the other Eastern races quite equal to the Italians in this respect, but our experience relates chiefly to the second crops of red clover, usually in bloom during August and September. Can any of our readers confirm our views in this respect?

Adulteration of Honey.—'*Sera nunquam est ad bonos mores via*.' The following resolution, passed *nem. con.* at a late convention of the 'New York Bee-keepers' Association,' is most satisfactory:—'That this Association has read with pleasure the public announcement made by Thurber, Whyland, & Co., that they will hereafter put up no more comb-honey in glass jars with glucose around it, which they have heretofore done, to the detriment of the honey industry, and which has subjected them to severe criticism by this Association and bee-keepers at large.' We could have wished that the pledge could have extended to '*jars or utensils of any material whatsoever*,' or rather to an abjuration of the use of glucose, or any other adulterant, in preparing honey for the market.

American Queries.—'Which man seems to know most about bee-keeping—the expert or the beginner? *Ans.*—The beginner, every time. Are not tin separators on the whole the best? *Ans.*—from several *novices*—'No.'

Heddon's Reversible Hive.—We have been favoured with a sight of Mr. Heddon's book, entitled, *Success in Bee Culture*, in which he describes fully his new hive, and of which he gives several engravings. It consists of an ordinary hive, nearly approaching the Langstroth in size and shape, containing eight frames, and divided into two horizontal sections, each section being reversible as a whole. The depth of the frame is 5⅜ ins., length 18 ins., outside measurement. On these, which are considered brood compartments, section-frames (also reversible) are used, on the tiering-up system. The frames are close-ended, which in our opinion condemns the whole thing, and are held together by thumb-screws worked from the outside. The frames, as well as the horizontal sections, are reversible. We should not like to attempt to reverse close-ended frames after they had been in use for a twelvemonth. The hive is on the storifying system, and resembles the Carr-Stewarton, except in the size of its frames and reversibility. This is the hive which is to revolutionise bee-keeping all over the world, and of which the Rev. W. F. Clarke thus writes:—'I shall use no other hive in my future dabblings with bee-keeping. This is what I want and all I want. It is long-looked-for come at last. I have dreamed of a hive like this, and the reality passes the dream. It will henceforth be a luxury to keep bees. The hard slavish work is all taken out of the business, and what remains is merely pastime. The danger now is that bees and bee-keeping will become too common. Everybody will want to rush into a business so inviting. Little honey will "waste its sweetness on the desert air" in the good time coming. Honey will become as cheap as sugar, and will rank among the necessaries of life,' &c., &c. Happy Mr. Heddon, with his 450 colonies and a large trade in appliances, to have enlisted such a 'Boswell' to sing the praises of the heaven-born hive, for such it must assuredly be, since nothing terrestrial could ever prove so perfect.

Seriously, we know of nothing more injurious to the best interests of apiculture than this incessant hankering, like the Athenians of old, after something new. No sooner has a man taken up the pursuit and established an apiary than he finds his hives, feeders, extractors, *et hoc genus omne*, superseded and become old-fashioned; and he is told that, in order to keep up with these times of depression, he must discard the old and adopt the new—a doctrine, however comforting to purveyors of apiarian appliances, by no means consolatory, and not a little confusing, to beginners whose means are limited. It is almost enough to make one say, 'Keep to the old skep system of "cke" and "super," and "let-'em-alone," rather than run into all the extravagance and expense of modern inventions, and after all to realise from 6*d*. to 8*d*. per pound for your honey.'

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Committee Meeting held at 105 Jermyn Street on Wednesday, March 24th; present, the Hon. and Rev. H. Bligh (in the chair), the Rev. F. C. Jenyns, the Rev. F. S. Sclater, the Rev. J. L. Seager, Captain Bush, R.N., Captain Campbell, H. Jonas, J. M. Hooker, D. Stewart, Dr. Walker, W. O'B. Glennie (treasurer), and the Secretary. Letters were read from Dr. Bartrum, the Rev. G. Raynor, and Rev. F. T. Scott, regretting their inability to be present.

Upon the motion of the Hon. and Rev. H. Bligh, it was resolved that after the month of April the Committee Meetings be held on the Wednesday falling on the 15th, 16th, 17th, 18th, 19th, 20th, or 21st, of each month (third Wednesday) at 3.15 (carried). Reports were read—

(1.) From the Examinations Committee, recommending that Saturday, May 15th, be fixed as the date for holding the first-class examination. The Secretary was requested to make inquiries for rooms suitable for the examination.

(2.) From the County Associations' Sub-Committee, recommending that arrangements be made for sending a lecturer to various counties in South Wales, in which County Associations had been recently formed. Captain Campbell reported that the organization of the Surrey Association had been considerably improved, various local committees having been formed in new districts, resulting in a considerable increase of members.

The Secretary reported that a new edition of *Modern Bee-keeping* would shortly be required. Resolved that

a copy be sent to each member of the Committee for revision, and that the Hon. and Rev. H. Bligh, with Messrs. Hooker, Stewart, and Walker, be appointed as a sub-committee to make the necessary arrangements in respect to the final revision and publication of the new edition. The next Committee Meeting was fixed for Wednesday, April 14th, Quarterly Meeting to take place on April 28th.

INSTRUCTIONS AND REGULATIONS *to be adopted by the B. B. K. A. in relation to all Shows of Honey and Bee-Appliances held under their authority, and recommended for similar adoption by County Associations, the object being to secure uniformity as to the mode of placing exhibits before Judges, the simplification of the work of Secretaries and Managers of Shows, and the better protection of exhibits.*

REGULATIONS.

All entries must be made on the forms provided for the purpose, which, with the declaration thereon, must be properly filled up, and signed by the exhibitor, and forwarded to the Secretary.

Upon the receipt of entry-forms and declaration correctly filled up, address-labels for the despatch of the exhibits to and from the show will be sent to each exhibitor.

All packages of exhibits must have the address-label (forwarded by the Secretary) attached thereto. The name and address of the exhibitor must be legibly written on the reverse side, with proper instructions for the return journey, and no exhibit will be received without being thus labelled.

No prize or other cards awarded at previous shows can be displayed on the exhibit.

No portion of the exhibit to be removed during the show without the consent of the Secretary.

The Judges are empowered to withhold any prizes or to award extra prizes; their awards shall in every case be final. During the judging no exhibitors shall be present.

Hives.—Hives sent to the care of the Secretary for exhibition should be securely packed in crates, opening at the top. The top of crate should be screwed down (not nailed), with as few screws as are necessary for its safe transmission to and from the show. The various parts of the hive, stand or floor-board, body box, super, and cover, should be securely fastened, and a strong cord tied firmly round the hive previous to its being placed in the crate.

When hives are not forwarded in crates, the legs (if any) should be braced together, and the various parts of the hive secured and tied as above.

The number of the exhibit, and the class in which it is intended to be exhibited, must be legibly marked on each detachable part of the hive, previous to its being forwarded to the show: but no label, trade-mark, or name of the exhibitor, is to be placed thereon before the judges have awarded the prizes.

The Committee cannot undertake to repack hives that are not sent in accordance with the above instructions as to packing.

Comb Honey.—Supers should be packed in boxes with a thick layer of straw at the bottom, sides, and top, so as to protect them from sudden jar through careless handling by carriers, &c.

Supers should always be exhibited on stands made so as to prevent any leakage of honey, and also to enable them to be lifted out from the boxes in which they are packed without danger to the honeycomb.

Supers having bars, Stewarton boxes, &c., travel more safely turned upside down. They should be exhibited in this position with the exposed parts covered with glass.

Sections.—Should be packed in exhibition crates, each section must be glazed on both sides, to protect the honey from the attacks of bees, or other injury. The glass may be secured by metal clips, or with white paper edging, which must not cover the glass or side of the sections more than a quarter of an inch on either side, or in any other neat way capable of easy removal by the Judges. Each section may be exhibited in a small box with glass on both sides, instead of glazing the section itself. Sections for each class must be separately packed with the number of the exhibit and class legibly marked on the package, and on each section included in the exhibit, previous to being forwarded to the show, but no label, trade-mark, or name of exhibitor, is to be placed on any part of the exhibit before the Judges have awarded the prizes; and then only such as are approved by the Secretary.

Run or Extracted Honey.—All run or extracted honey should be exhibited in white glass bottles or jars, all being of the same size and form in each exhibit. They must all be securely *corked*, and covered either with a metal or other screw top, a metal capsule, or neatly tied over with parchment, or strong parchment, or other paper. The number of the exhibit, and the class, should be legibly marked on the package, and also on each bottle or jar included in the exhibit.

SURREY BEE-KEEPERS' ASSOCIATION.

The sixth annual meeting of the members of the Surrey Bee-keepers' Association was held on Saturday afternoon, the 13th ult., in the large room at the Royal Arms Coffee Tavern, North Street, Guildford, Mr. Archibald Seth Smith, of Silvermere, Cobham, presided, and the room was filled with members, amongst whom were the following:—Mr. T. Chapman (chairman of committee), Captain Campbell (secretary), Mrs. Brownrigg, Mrs. Tickner, Mr. and Miss Bulbeck, Mr. Daw (treasurer), Messrs. F. Lemare, P. Waterer, W. de Lacy Ahern, J. Harrison, J. Siggery, Fogenee, F. S. Fletcher, Milton, J. Elson (expert), Osborne, Browne, J. Browne, of Bramley, W. Williamson, and others. Captain Campbell read the report, which stated that good progress had been made by the Association during the past year: its operation had been extended over the county, and new districts arranged at Sutton, Leatherhead and Cobham, Cranleigh, Haslemere, and Wotton (near Dorking), under energetic local secretaries, with a very large increase of members, making a total of 316 against 211 as reported last year, including forty-four cottager members, who are steadily advancing in knowledge of bee-culture, though better opportunities of disposing of their honey and wax are greatly to be desired. The annual county bee show was held at Sutton on the 12th August, in the grounds of Mr. H. L. Antrobus, in conjunction with the Sutton and Cheam Horticultural Society's Show, and proved to be by far the largest and finest show of honey and appliances that had ever been exhibited in Surrey, but through bad weather in the afternoon all hope of a financial success from the show had to be abandoned. The silver and bronze medals, and the certificate of merit of the British Bee-keepers' Association, were respectively awarded to Mr. W. Hollands of Croydon, Mr. J. Chater, and to Mr. F. Hewetson, of Sutton, and the certificates of merit of the Surrey Bee-keepers' Association to Mr. H. Lyddon and Mr. Nixon, of Sutton, and a sum of nearly 30*l.* was given in prizes at Sutton, Croydon, and other shows. The bee-tent of the Association was in constant demand during the summer. Honey shows and honey fairs were also held at Croydon, Chobham, and Bagshot, but the severity of the winter prevented the usual number of winter lectures on bee-culture being given. The visits of the cottagers' expert (Mr. James Elson) had been much appreciated. The financial results of the past year were not so satisfactory, but showed a deficit of 8*l.* 15*s.* due to the treasurer,

but there were no outstanding liabilities, and there was property to the value of 35*l.* in hand. The committee acknowledged with special thanks a donation of 10*l.* from their president (Mr. J. Steward Hodgson). The report was adopted, and the committee and officers re-elected, Mr. T. J. Witt, of 44 Dingwall Road, Croydon, and Mr. William de Lacy Ahern, of Sutton, being elected as representatives at the meetings of the British Bee-keepers' Association. Captain Campbell then read notice of a motion, which he explained would give those who paid 5*s.* and upwards the service of the expert free, and that the *Bee Journal* would be circulated weekly to all who paid one shilling a-year for two days' reading, it being sent free to all cottagers who wanted it. The first motion was carried unanimously, and the second was also carried, after some discussion, in which Captain Campbell explained it was not his proposal, but the committee felt it was needed from the state of the funds, and that it was for the members present to decide yes or no. After a vote of thanks to the chairman and officers for the past year, the business concluded. Mr. Ahern read a paper upon the advantages said to be obtained by reversing the combs in the hives, and quoted the results of several bee-masters who had adopted it. Captain Campbell moved the thanks of the meeting to Mr. Ahern for his paper, Mr. F. Lemare seconded the motion, which was carried by acclamation. A general conversation followed, and after tea had been served, the meeting concluded, much anxiety being expressed as to the prospects of a honey harvest after so severe and long a winter.

THE LANCASHIRE AND CHESHIRE BEE-KEEPERS' ASSOCIATION.

The Fourth Annual Meeting of this Association was held at Liverpool on March the 9th, and was well attended. The new and rapidly growing Lancaster Branch was well represented, and great interest was manifested in the proceedings.

Mr. Sitherley having been voted to the chair, the statement of accounts for the past year was brought under discussion, and was approved of. It showed a balance of assets for the new year of 13*l.*, which, with the present depression of trade, and the Association's heavy outlay for expenses of shows and expert's visits to members, was considered very satisfactory. There has also been a considerable increase in the number of members during the year.

The results of the election for the new committee were then announced, Mr. C. P. Sitherley being elected chairman for the year. The Earl of Lathom was re-elected president, Captain Cotton, M.P. for Wirral, patron, and amongst the new vice-presidents elected were the Mayor of Liverpool, the Mayor of Chester, and Canon Blundell, who have consented to hold office in the Association for the present year.

The Rev. J. F. Buckler next moved that the Executive Committee be elected in future at the annual meeting, and that only six of the Committee retire each year.

A good deal of discussion ensued, and ultimately an amendment, proposed by Mr. J. P. Jackson and seconded by Mr. W. Broughton Carr, was carried to the effect that such election take place at the annual meeting, but by ballot, and with the use of proxies; also that all the members of the Committee retire each year, but be eligible for re-election.

An important equalisation of the franchise was also proposed by the Rev. Mr. Buckler, and was carried unanimously, namely, that all members of the Association have equal voting power, and that no distinction be made in the number of votes to be given by five-shilling as distinguished from twenty-shilling subscribers.

Various other routine and minor matters having been attended to the meeting closed with the usual votes of thanks.

R. F. Anderton, } *Hon. Secretaries.*
J. F. Little, }

Selected Query.

[222.] *Which do you consider the best sized sections for general use, and which are the most saleable?*

We have always used 4¼ × 4¼ × 2 for one pound, and 6¼ × 5¼ × 2 for two pounds. When visiting shows we have noticed more of these sizes than of all other sizes put together. We have always found the small sections much more saleable than larger ones.—Editor.

The 4¼ · 4¼ · 2 section is undoubtedly the best size for general use, and also the most saleable size. For 2 lbs. I like the 6¼ · 5¼ size, as when they are well filled they contain 2 lbs. net.—W. Woodley.

The 4¼ × 4¼ for both purposes.—J. Garratt.

For 1-lb. sections I prefer the dimensions 4¼ · 4¼ · 2. For 2-lb. sections 6¼ · 5¼ · 2. These sections are so generally used, all the world over, that I consider the B. B. K. A. would act wisely in establishing them as its standard sections. One-pound sections are most saleable.—G. Raynor.

The 4¼ × 4¼ · 2 bars are best and most saleable if separators are used in the racks.—John M. Hooker.

One-pound sections are the most saleable when well filled; but they are not worth the trouble of producing at present prices.—R. R. Godfrey.

I find the 4¼ × 4¼ 1-lb. sections the best for general use, simply because they are the most saleable, and also the most convenient size for use on our own table. The 2-lb. sections are certainly most readily taken to by the bees.—P. H. Phillips.

The 4¼ · 4¼ sections are, I believe, not only the most generally used, but the most convenient; and being readily saleable in any market I consider them preferable to any other for general use. I have long since ceased to use other sizes, except 2 lb. (5¼ · 6¼) for exhibition, and those I have always had to consume at home or give to friends.—C. N. White.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The Editor of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C." All business communications relating to Advertisements, &c., must be addressed to Mr. J. Huckle, King's Langley, Herts (see 2nd page of Advertisements).

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PLANTS FLOWERING IN APRIL.

[223.] The April bee flora will be composed, to a great extent, of those that usually flower in March. The following sorts will flower during this month: crocus, willow, alder, blackthorn, myrobella plum, Iberis aubrietia, wallflower, cherry, red flowering currants, gooseberry, pears, plums, apples, phacelia, and borage (autumn sown). &c.—By. Dobbie.

FOUNDATION FOR SUPERS. [186.]

[224.] I fail to see the superiority of naturally built combs in sections as compared with those drawn from full

'Production of comb honey with and without separators in wide and narrow sections.' This was the subject of an address by L. S. Newman of Peoria, N. Y., at the Convention of New York State Bee-keepers' Association, held at Rochester, N. Y., on February 16th. The sense of the meeting was afterwards taken on 'The use of separators.' 'The Association expressed its preference for separators.' In Selected Query No. 1, the question of the use of separators was raised, and the above may be taken as a valuable addition to the several replies thereto.—John M. Hooker.

sheets of thin foundation, notwithstanding the remarks of Mr. Sharp [186] and also those of 'Amateur Expert,' p. 117, present volume.

When I offer a customer sections of comb honey, I find those combs are required which appear to be *most completely filled*, and I am sure both of the above-named correspondents will admit that combs built from starters *are never* built out and filled closely all round, as is the case when a full sheet of foundation is used, allowing no bee-passages or 'pop-holes' whatever. Particularly is this the case where, by my new process, every section is completely filled with comb, whether previously built from foundation, or naturally, in the larger brood frames.

Contrary to Mr. Sharp's supposition, I *do* use, and recommend, natural combs for sections, but not as being superior to those built on foundation. By careful management, many such can be obtained in brood-frames, and should then be fitted into sections close all round, allowing no bee-passages whatever; but I repeat that no bee-keeper will be able to compete with present prices, if he expects to have natural combs built from starters only in sections; and, moreover, no bee-keeper of the future will follow such a plan, if he intends to produce comb-honey at a wholesale rate.

I candidly admit that in producing large quantities of comb-honey of the first grade, I cannot dispense with foundation, but it must be of the *right kind*, and even thicker than is generally supposed to be necessary for section-honey.

While using foundation 'ten-feet to the pound' I could find nothing better than the flat-bottom 'Van Deusen;' but requiring my combs first built out in full sheets in brood-frames, I looked about for something stronger, and at the same time a foundation with a base equally as thin, but with the side walls much heavier. I find that known as 'Pelham' a more suitable foundation than any I have tried; it has a very thin base, while the side walls never having received the slightest pressure, are soft and pliable, and, therefore, are drawn out as thin as can be desired. Instead of ten-feet as before, I am now able to use the 'Pelham' eight-feet to the pound: and so far from the judges and consumers being able to detect the difference, I have known of the highest honours being gained by most perfect combs built upon 'Pelham' foundation of even greater weight to the pound.

Mr. Sharp endeavours to draw distinctions which are simply imaginary, and, moreover, such as are likely to do incalculable injury to the honey trade. If sections naturally filled are absolutely pure, so also are those built upon natural wax remoulded by man; and no one need be ashamed to state that he uses such, but when it comes to saying that those without foundation are the only kind which can be recommended as pure British honey, we shall indeed be verging upon the 'ridiculous.'

Mr. Sharp brings in the subject of extracted honey, which has nothing whatever to do with our present discussion; but he expects to obtain such as soon as the first honey-glut occurs, about the middle of June, while he 'hopes'—a forlorn hope—to obtain what little section honey he requires *before* the honey-glut occurs. I should have thought Mr. Sharp was aware of the fact that no comb honey can be obtained unless the state of the atmosphere is such as to cause the secretion of nectar in large quantities, hence the term 'honey-glut;' and if he obtain any section honey from fruit bloom, &c. early in the season, it will most certainly be done *only* during a 'glut.'

It is not generally known that the month of May is the one above all others when honey is most abundant in many localities, and more frequently it is not the much-abused weather, but the backward condition of stocks at that early date, which really is to blame. Until last summer, for many years in succession, I found there was not a single year but what (in the South of England) honey was obtained in considerable quantities during some part of May. It is not always fruit-blossom honey that is obtained in this month, even in good fruit-growing districts. If the bee-keeper will take the trouble to look round, he will find what is of far greater value—many acres of yellow trefoil, from which much of the so-called fruit-blossom honey is derived. Last year the wind held so persistently to the N.E. that little or no honey was obtained until the first week in June. An easterly or south-easterly wind, however, is always favourable to the secretion of honey during the latter part of May, becoming at that time quite hot; and, besides the trefoil, we have at the same time the sycamore, one of the very best honey trees. The plant and tree mentioned are of more value during May than any gorgeous show of fruit bloom, which latter I am satisfied does not produce anything like the amount of honey generally supposed to be derived from that source alone.—S. Simmins.

ROBBING.

[225.] The above being an evil which not only the inexperienced, but also the advanced bee-keepers, have to contend with, I venture to give what I believe will be a useful hint to anyone who may at any time be placed in such a critical position as I once all of a sudden found myself to be.

In the latter part of September, or the beginning of October, of 1884, I purchased twenty stocks of bees in straw skeps, which were brought to me by road a distance of about nine miles, reaching me about midday, that being the only time of the day at which I could attend to the unloading and liberation of bees. They were carefully packed mouth upwards, covered with course canvas, and were conveyed in a carrier's large spring cart. As each stock was handed to me and turned right way up, I was very careful to put my hand under the canvas to ascertain if the combs were all secure, and was pleased to find that there was no sign of a single comb having given way. The hives were set up in a row, and after a little time the bees were liberated, and by the time I left my apiary all was comparatively quiet.

I was gratified with the success that had accompanied the transition of bees, and congratulated myself upon the bargain I had made, but which ultimately turned out to be a profitless one. In the afternoon the sun came out very hot, and not knowing what effect it would have upon my enlarged apiary, I thought it would be advisable to go in my tea-time and have another look at my newly-purchased stock, and thus make doubly sure that all was right; but when I reached my apiary I found to my horrible surprise that during my absence the combs of about a dozen of the hives, all heavily laden with honey, had broken down, and that honey was running out of the hives very freely! My apiary was all alive, and robbing was going on at a most terrific rate. What to do I did not know. I knew, theoretically, of a hundred-and-one ways of dealing with robbing, all of which in such a critical moment appeared to be altogether impracticable. At first I thought of narrowing entrances to the utmost extent, but when I took my smoker to clear away the bees to admit of such being done, my hand, smoker, and legs were instantly covered with a cloud of bees,—a more critical position I as a bee-keeper was never in. My apiary consisted of nearly sixty stocks of bees, which represented several years' hard earnings, and I was quite certain that unless I could instantly and effectually stop the malady, I should run the risk of my whole apiary being quickly destroyed. As I stood with my studying cap on, as the saying is, trying to devise some speedy remedy, my eye

fell upon a large heap of grass which I had mown a day or two previously. This was quickly utilised, every skep being entirely covered up so as to make it look like nothing more than a heap of grass. The result was of a magical character, robbing not only at once ceased, but the robbers did not even stop to lick up the honey which was laying around the hives in large quantities under the grass. Next morning the broken combs were taken out in the quickest possible manner, each hive being again covered up with grass, and later on the bees were united and put into frame-hives. Since then I have never suffered through robbing. If I see any signs of such, I cover up the hive with grass, hay, or straw, hanging it rather loosely over the entrance so that the rightful occupants can find their way in and out, but through which the robbers dare not pass. A few days later on the covering is removed.—A. SHARP, *Huntingdon.*

THE ZULU QUEEN.

[226.] Alas, alas! She is now the dear departed, though the carriage from South Africa was only 4s. 6d. When I first cast my longing eyes upon her I could have said, with ancient Pistol, 'A fountain for the world and worldlings' bees! I speak of Africa and golden queens.' Lovely was she in life; her golden bands shone like burnished plate, and now she is no more—alas! poor Zulu.

Why she deceased I know not, unless the bees suffocated her when in the cage. When I recaged her she was perfectly lively, and there was plenty of honey unsealed. She was not 'curled up on the floor,' but was extended in the cage. So her death was not due to a sting from one of the worker-bees.

Introducing foreign queens is always ticklish work. To put it mildly, they stink like badgers; and bees, though accustomed to their own scent, don't hanker after a nigger.

Here were my blessed bees, queenless, and not a drone egg even laid! A sweet young thing is introduced to them, with proper formalities, and they treat her with such disrespect that 'there burst her mighty heart.' Don't you think, Mr. Editor, that it would be a good subject for discussion at a Quarterly Conference? Is the idiotcy so common to the human race (including doctors) analogous to, or homologous with, the prevalent predisposition of worker-bees to ball a strange queen?

Thou art dead as a herring, my beauteous Zulu—
A herring, I mean, that is red;
The cause of thy death I wish that I knew,
Though it would not bring thee back from the dead.
How the news of thy death will grieve Dr. Stroud!
For 'tis the pity, the pity, heigho!
My sorrow is deep, my wailings are loud,
You are as dead as Cetewayo.

GEO. WALKER, *Wimbledon.*

HUNTLEY & PALMER'S HONEY CAKE.—COCOA-NUT CANDY.

[227.] In the *Confectioner* for February 20th, 1886, is a paragraph to the effect that Huntley and Palmers are bringing out a new honey cake, and are advertising for twenty tons of honey per week. Is this so? or is it an echo of the honey-drop business of Healtheries fame, which has only now reached the ears of Mr. *Confectioner?*

In the same number is a recipe for cocoa-nut candy, which without the cocoa-nut, or with peaflour substituted for it, is just the thing for bees. Here it is:—'6lbs. of white sugar, ½oz. cream of tartar, slightly over a pint of water. Boil to "soft ball"—248 by thermometer. Rub against side of pan with the spatula until it becomes white, then add cocoa-nut chips (or pea-flour) and turn out on to the slab, or into moulds.' Notice the low degree to which it is boiled—not until it sets hard and brittle.—F. LYON.

SPRING STIMULATION.

[228.] May I trespass upon your valuable space to make a few remarks on the above?

I quite agree with Mr. Simmins that stocks should be fed in the autumn, especially in districts where the honey harvest is over by the middle or end of August, so that each stock should have at least enough stores to carry them over to the end of March, as I do not believe in letting my bees feel that their stores are running short, as if this should happen at any time breeding is carried on, breeding would be checked and young grubs cast out, which would be a great loss.

A strong stock with plenty of stores may give good results on the 'let-'em-alone' system, provided that there is an early supply of honey and pollen to stimulate them before the regular honey harvest sets in.

But in a country like we have here, where there is hardly anything for our bees to have before the appearance of fruit blossoms (as it is grazed by sheep), it is a great benefit to stimulate our bees to early breeding in order that they shall be strong enough by the time fruit trees will be in bloom. But as for weak stocks, these without being stimulated would give hardly any surplus honey till the best part of the honey harvest is over.

Of course there are rules to be attended to in spring stimulation as well as with any other undertaking, and if these rules are not kept it is sure to turn out a failure, and the bee-keeper has no one but himself to blame. There are a few rules which I think are very important:—

1. Never commence to feed too early, six weeks before the appearance of apple-blossoms is quite early enough.

2. Feed slowly: about a gill a-day is sufficient to commence with. The right quantity is the most difficult for a beginner to arrive at, as it is not the same quantity that will suit every stock, although they be equal as regards stores and number, as will be seen by the following:—I had a twin hive with a stock at each end, both covered six standard frames. Commenced feeding both on April 2nd, and gave same quantity to each. Opened in a fortnight's time to examine—both doing well, but No. 1 contained considerably more brood than No. 2. Opened again in another fortnight; found No. 1 in a most flourishing state, but No. 2 was so thoroughly clogged with stored syrup, that there was not a single cell for the queen to lay. This is a hint to beginners to be very careful to see that the bees do not store any of the syrup, as if they do it shows that there is a deficiency either in the supply of pollen or in the laying powers of the queen. If it is that of pollen, it should be given to them; if it is that of the laying powers of the queen, the remedy for the time being is to lessen their feed, but I need not say that this queen should be superseded at the earliest possible convenience.

3. Do not be in too much of a hurry about spreading the brood. A beginner should never early in the spring attempt to introduce an empty comb into the centre of the brood nest. This, perhaps, would be all very well with an experienced bee-keeper, but in the hands of a beginner might be harmful. All that is necessary is to exchange the combs already in the brood-nest, *i.e.* take the comb containing the least brood in the place of the one containing the most.

4. Do not open the hives too often, and only on a fine warm day.

5. Do not cut off their feed all at once, but gradually lessen it; and, as far as my experience goes, if the foregoing rules shall be kept the bees will amply repay you for all the trouble and expense in the extra amount of honey which will be obtained from them.—H. P. JONES, *Llanerch, Dinas Mawddwy.*

HOW I PREVENT AFTER-SWARMS.

[229.] Seven days after the first swarm has issued (I do not care for artificial swarming) I listen very attentively

for the 'piping' of the queen. It may not be heard very clearly until the eighth, ninth, or tenth day; but when *two* queens are heard distinctly 'piping' to each other (and this can invariably be heard in every hive where there are queen-cells) I open the hive and take out each frame carefully, and cut out all the queen-cells I can find, placing the bars back as I do this in the same order as before. I always find that the day after this manipulation the bees that were idle ascend into the super and work away in right good earnest, giving up all thought of swarming. If I do not want to keep any swarms I return my *first* swarms to the parent stock again just before sunset on the day they have issued, killing the queen, and manipulating on the parent hive as before mentioned to prevent further swarming. This has been my practice for more than six years, and has answered admirably; I have never as yet had a mishap. It may be a novel way, and perhaps an absurd way, to more advanced bee-keepers and 'bee-masters,' but to me, a *very humble bee-keeper*, it is less trouble, and the easiest way to prevent after-swarms and obtaining more honey. On the average I obtain 56 lbs. of the very best honey from each of my stocks, leaving sufficient to carry them safely through the winter.—The Manager, *North Cornwall Apiary, Rowe, Bodmin, Cornwall.*

PREVENTION OF SWARMING.

[230.] The late vicar of a neighbouring parish was devoted to bee-keeping. He had two sons who were not. During his absence the bees were left to the *in*attention of these two boys, and as above all things they hated hiving a swarm, but dare not lose one, they adopted the following effective method of prevention:—When the bees showed signs of swarming, they took it in turns to watch, provided with a chair, jug of beer, tobacco, a bucket of water, and a good syringe: as soon as the bees came pouring out they were met with a discharge from the syringe, and required no more for that day, probably thinking the weather not suitable for a change of quarters.—Victor.

QUEEN-RAISING IN SMALL APIARIES.

[231.] 'Always have young queens" in full profit" in your hives.' This, we know as one of the most important rules for successful bee-keeping. And to obtain these young queens, and of the best strain, in an apiary of some size, no directions can possibly be clearer or better than those Mr. Cowan gives in the *Bee-keeper's Guide Book*.

But in a small apiary—say, one of four stocks—a very common number for amateurs who merely want honey for their families and friends, what is the best process? I would invite answers to this query.

If I had that number of hives I should certainly grudge devoting, even for a time, the best of them to the raising of queen-cells, and another good one to the raising of drones. At the most I should only want two queens a-year, but at the same time I should object to buy them. I should want them home-grown. The question then is, how these are to be obtained and substituted for old queens with the least possible loss of valuable time in the honey season?—F. G. Jenyns, *Knebworth.*

EARLY QUEEN REARING.

[232]. *March 17th.* This being a glorious day, an unclouded sun, raising temperature to 60°, and bees flying after their long imprisonment as merrily as in June, I took the opportunity of examining my seventy-five colonies. Blacks have stood the past severe weather without a single failure and are still well provisioned. Ligurian nuclei, five have succumbed, although autumn-reared bees were plentiful, to crowd five and six frames each hive. These were headed by home-reared and purely fertilised queens. Strange, other stocks headed by last autumn-imported Ligurian queens are flourishing, having eggs sealed and hatching brood. I may here say half my hives are single and half double walled, and the fatality of the nuclei was 3 to 2 in the latter.

Those who are interested, single walls *v.* double in point of economy, may have satisfaction to know I found the single walls containing Ligurians and blacks far ahead in point of brood; one especially so.

This has a queen now heading about ¾lb. of bees which queen was introduced so late as the middle of September last. Finding these bees had consumed nearly all their stores, and wonderfully active (I was manipulating without smoke), I looked still further to see in what measure I should replenish, when I beheld a queen-cell, well and truly sealed, amid other brood. Judging robbers might have killed her lawful majesty, I took the queen-cell as a case of emergency, this causing me to be more fully satisfied concerning her fate. No sooner the thought than I espied her highness taking her usual quiet walk amid her company; concluding, therefore, the queen-cell was tenantless, I proceeded to remove it, first carefully lifting the capping, when, to my astonishment, I found the larva (I now enclose) well matured and developed, leaving when withdrawn a good supply of royal jelly, pointing most conclusively that in a few days another queen would have been within that home. What her mission I know not, for at least four or five weeks would elapse ere in the course of nature she could be fertilised. Maybe her mother would have found her a job, drone-producing.

Two years having elapsed since Mr. Simmins gave his Economic hive in *B. B. J.*, of January 15th, 1884, which then was most adversely criticised, it is but fair to say my single-wall hives are his pattern, and the forward state of bee life (after the past long, long cold spell) in same, proves all Mr. Simmins then claimed. The shape of roof was pronounced unsafe against weather, damp, &c. My experience has been otherwise proving no better weather-resisting and damp-proof roof exists. When properly made, such would bring comfort to the many who corresponded upon dryness of hives.—Robin Hood.

Replies to Queries.

**** In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[212.] *Boiling.* (J. C. B.)—Syrup for spring stimulation can be made without boiling, thus:—Put the water into a deep vessel, such as a jug, tie the sugar in a muslin bag and suspend it to a stick laid across the jug, so that it is just under the surface of the water. If arranged overnight the syrup will be ready in the morning. It will require stirring, as the lower part will be denser than the upper.—F. Lyon.

[212.] *Boiling.* (J. C. B.)—Yes, by pouring boiling water on the sugar and stirring until the sugar is dissolved. If you have a cylinder extractor make a good stock at one mixing and use the extractor for the purpose. You can 'stir' it so famously; I confess I prefer boiling.—Amateur Expert.

[212.] *Boiling.* (J. C. B.)—Yes, by suspending the sugar in a cheese-cloth in the water, it will gradually dissolve, or by using the sugar in a feeder constructed for such a purpose; these feeders are to be obtained of most dealers in apiarian supplies.—W. B. Webster.

[213.] *Curing Dysentery.* (Young Bee-keeper.)—Now that we have got some fine and warm weather your skeps will become free from dysentery, if you will remove floor-boards and give them nice clean dry ones. See that the skeps are not damp, if so uncover and let the sun dry them.—W. B. Webster.

[213.] *Curing Dysentery.* (Young Bee-keeper.)—Mr.

Cheshire has something to say presently as to the cause; this will probably lead to a remedy. Doubtless your bees are already better, although probably the effects are seen in undue mortality. Use salicylic acid in your food.—AMATEUR EXPERT.

[213.] *Dysentery.*—If the weather in 'Young Bee-keeper's' district has been anything like the glorious change we have had here during the past week, I expect his bees are nearly cured of the dysentery ere this; if not, feed with thin syrup with a little salicylic acid added. It will help them and cannot harm them. Be careful in feeding and not expose any food, or you may start them robbing.—WOODLEIGH.

[213.] *Curing Dysentery.*—Having had a stock of bees suffering from dysentery this spring, which I transferred to clean hive and fed with syrup, made as follows:—1 lb. of sugar to half pint of water, and scrape into it a small quantity of the inner bark of the oak and let it boil a few minutes. I have tried this, and my bees soon got quite healthy and are now breeding well.—A. J. BROWN.

[214.] (Young Beginner) and [221.] (Villager.)—*Disinfecting after Dysentery.*—Expose the combs to the fumes of burning sulphur, and then freely to the air.—F. LYON.

[214.] *Dysenteric Bees.* (Young Bee-keeper.)—Clean them with carbolic soap and dry them perfectly. If the combs are in a very bad state I should melt them down; but if not, clean them as much as possible and the bees will finish the rest.—W. B. WEBSTER.

[214.] *Dysenteric Bees.* (Young Bee-keeper.) Thoroughly disinfect the hives with carbolic acid, and try and air them well before placing bees into them again.—AMATEUR EXPERT.

[214.] *Foul Hives.*—Thoroughly cleanse them with carbolic soap and water and stiff fibre brush *à la* housemaid, rinse with clean water, and when dry return your bees on as many frames as they will cover. Feed gently, and give extra frames as required.—WOODLEIGH.

[215.] *Skeps.* (Young Bee-keeper.)—Yes; place your super of shallow frames on the top of skep, in the same manner as done with rack of sections when working them on skeps. Make as large a hole as possible in bottom of super and top of skep; the bees will go up with more despatch if such is made larger than the size usually found in straw hives.—W. B. WEBSTER.

[215.] *Skeps.* (Young Bee-keeper.)—It would not be very profitable, as you would enlarge the hive so considerably at one stroke, cut your nine-inch boxes in half and try four-inch frames instead.—AMATEUR EXPERT.

[215.] *Skeps.*—It may be possible, but I don't think practicable, unless over Baldwin's low skeps.—WOODLEIGH.

[216.] *Ligurianising.* (F. A. W.)—If you care to go to the expense of purchasing mothers for all your hives and introducing one to each (not forgetting that you will sure to have some failure when introducing) that will be the quickest and earliest way of Ligurianising all your stocks; if such an expense is an object you will have to start nuclei and rear your mothers from two or three purchased and introduced. See answer to Query 159, March 11th.—W. B. WEBSTER.

[216.] *Ligurianising.* (F. A. W.)—By ordering fifty queens at once for earliest *safe* delivery and introducing them to your stocks, and after you have succeeded be rewarded by a fit of remorse, 'Vanity of vanities—all is vanity.'—A. E.

[216.] *Ligurianising.*—Order your Ligurian queens and introduce them direct, first deposing your reigning queens. I should advise doing so in batches of say ten hives at a time.—WOODLEIGH.

[217.] *Stinging Gloves.* (Rector.)—I have just had a pair sent to me by the manufacturer for my inspection and opinion, which no doubt would suit your purpose exceedingly well. The bees cannot fix their stings into the leather, being prevented from doing so by the wool which has been left on the leather and made up with same outside. I can inform you where to get them.—W. B. WEBSTER, *Wokingham, Berks.*

[217.] *Stinging Gloves.* (Rector.)—The best way of preventing bees stinging gloves is to wear none. They are worse than useless, being great hindrances to manipulation, and when once stung retaining the smell of the poison and inviting further attacks.—F. LYON.

[217.] *Stinging Gloves.* (Rector.)—Use two pairs of gloves, the outer pair of very fine smooth cotton texture, and keep them well wetted with water. You have a feeling heart as well as tender skinned hands. Throw away your gloves, turn up your shirt-sleeves and secure them with an elastic band to prevent the bees from crawling underneath and save the lives of your poor bees.—AMATEUR EXPERT.

[217.] *Stinging Gloves.*—Has 'Rector' tried a little carbolic acid to scent his gloves with? perhaps that may induce the bees to run rather than fight. I think bees are more prone to stinging gloves than the naked hand. I examined all my hives the other day without gloves or veil, and did not get a sting. Move your hands slowly and deliberately among your bees, avoid jarring as much as possible, and with steady hand and good nerve you will soon relegate your gloves to the tool-house for occasional use in training the rose-trees over the verandah or harbour.—WOODLEIGH.

[218.] *Drones, Ligurianising.* (Victor.)—(1) After the swarming season is over, usually the latter end of July, that is presuming the hive to be in a normal condition; (2) Do not understand this query; if you purchase two fertilised mothers they will not mate again, this only taking place once in a life. (3) Yes, the progeny of a Ligurian, crossed with a black drone, are the best for honey gathering.—W. B. WEBSTER.

[218.] *Drones, Ligurianising.* (Victor.)—(1) When they cease to require their services; (2) purchased Ligurian queens should be fertile, and consequently would not require the services of a drone; (3) Yes, yes.—AMATEUR EXPERT.

[218.] *Drones, Ligurianising.* (Victor.) 1. When the influx of honey is at an end, generally first or second week in August. 2. Yes, if you are content to wait until the following season to possess Ligurian stocks. 3. Yes. And to second part, Yes, again. A first cross is fully equal, or even superior to the pure race. F. LYON.

[219.] *Obtaining Honey.*—A two-storeyed hive would be far better for obtaining extracted honey; for section honey, a hive containing ten, twelve, or fourteen standard frames (according to size of colony), with room to use two crates of sections one above the other, would be best.—WOODLEIGH.

[219.] *Obtaining Honey.* (M. C. H.)—Your query was answered in last week's *Journal* (Selected Query 183) by eight of the best (?) bee-keepers the kingdom has produced. Happy bee-keepers to be so well cared for!—A. E.

[220.] *Honey Comb Designs.* (Apis.)—The first one I saw was three years ago, but who produced it I cannot say, I believe it emanated first from Scotland.—W. B. WEBSTER.

[220.] *Honey-comb Design.* (Apis.)—As these fancy combs were exhibited at Rutherglen, Aberdeen, and other parts of Scotland, perhaps they were first designed by some ingenious member of the M'Nally family.—MELISSA.

[220.] *Honey Comb Designs.* (Apis.)—Honey-comb designs have been in vogue for many years on a small scale, but only within the last five years have they developed to any extent. To Messrs. William and Richard McNally, of Glenluce, N.B., is due the honour of the invention, the former of whom was the first to bring out the idea of letter-printing and other artistic designs. These gentlemen have won during the past five years, under the name of W. and R. McNally, all the leading prizes offered for that work and still continue to make designs a special feature in the hobby of bee-keeping. It is believed, however, the idea was first brought out by our American cousins.—W. SMITH.

[221.] *Disinfecting Skep.* (Villager.)—I suppose that you are uncertain what caused the death of the bees, as there was a sufficiency of stores. If from cold consequent on depopulation, you would be quite safe in putting a swarm in, but there is the possibility of its being from some description of disease of an infectious character; if so, it would be folly to do so. I should melt the combs down and spring feed my other bees with the honey; after diluting and boiling it wash skep with carbolic soap.—W. B. WEBSTER.

[221.] *Disinfecting Hives.*—Brush all the dead bees out with a feather from between the combs, then put a lump of camphor in and tie the hive in a piece of canvas, hanging it up in a dry room till June. Then before you put your swarm in, cut a good sized hole in crown ready for supering, put in your swarm, and next day put on your super.—WOODLEIGH.

Queries.

[233.] Can a summer drinking beverage be made from honey, and how? What is mead?—East Cumberland.

[234.] Will some practical painter kindly give full directions how to mix paint suitable for hives, the proportions of oil, turps, lead or other colouring?—W.

[235.] Can some one give price and size of Willesden cards, recommended as a covering for hives?—W.

[236.] *Lonely Queen.*—On March 23rd I visited a neighbours' apiary, and there I found one of his hives containing a very fine young queen, a few combs, a thimbleful of honey, but *not a single worker*. The queen was rather weak, but she ate well of honey that was given her, and in about one hour she regained her strength. Can any one give a reason for this? Is it not a rare occurrence for a queen to be left by herself in this way at this season of the year?—Old Drone.

[237.] *Placing Crates.*—Which is the best way to place crates on the hives? that is, Is it better to take off all coverings and place the crate *on* the bars, or place a piece of ticking, or some such material, on the bars, with holes cut in it, and place the crate on *it*?—F. J.

[238.] *Bacon Boxes.*—Could any reader inform me of a simple way to remove the salt from the wood of bacon boxes, so that it would be fit for hive-making?—W. F. A.

[239.] *Circular Saws.*—How are circular saws set to wabble for cutting groves, &c.? Professor Cook says handles may be cut in crates in an instant by having the saw set to wabble.—W. F. A.

[240.] *Perforated Zinc for Separators.*—If strips of perforated zinc be used for separators in section crates, would the sight of each other through the perforations stimulate the bees to better exertion? If so, would not perforated zinc be a better article than either wood or sheet zinc for this purpose?—A. B. Johnston.

[241.] *Second Entrance.*—Would a second entrance made in a hive, working in supers, be any advantage if it were made on a level with top of frames and under the lower crate of sections, as the bees would have a much shorter distance to travel from the entrance of the hive to the sections.—A. B. Johnston.

[242.] *'Starter' in Bell-glass Super.*—What is the best way of fixing 'starter' for bees in bell-glass super?—A. B. J.

Echoes from the Hives.

World's End, Newbury.—We have had a beautiful change in the weather since I wrote last, and the bees have made the most of the opportunity to clear out any débris and dead bees, while others have gone off to the woods in quest of pollen. The few crocus and snowdrop flowers have been crowded all day with bees, also two or three straw skeps half filled with clean shavings with peaflour and cornflour (mixed) shook over them. I saw them working the artificial pollen at 6.45 p.m., long after the crocus blossoms had closed for the day.—W. Woodley.

South Derbyshire, March 24th.—To-day the bees are carrying big loads of pollen from crocus, snowdrop, hazel, red alder, and the pea-flour skep. In December I had a skep blown over and all the combs—which only reached halfway down—broken short off. It remained upside down from middle of December to the middle of February. The bees survived the severe frosts of that period, and are now doing well—so much for inversion. (The above was a cast bought for a few shillings last autumn.) My best spring flower (not open yet) is the *Retasites vulgaris*, or common butterburr. Usually, about the 20th of March it puts up heads six to eight inches high, consisting of thousands of small pink flowerets, yielding honey and a great quantity of pearly white pollen. An island in the middle of Wilne Weir is covered with this plant. It would not be suitable for cultivation, as it is a most noxious weed, the leaves being two to three feet diameter, and smothering everything underneath. Wasps never molest my bees to any serious extent, though nests abound in the river banks during the season. I ascribe this immunity to the quantity of 'water-figwort' which grows by the river side. I have 'great expectations' of an excellent season.—M. J. Astle.

Oxford, March 24th.—After a long spell of cold weather we have at last had a bright day to examine our hives. Crocuses and snowdrops are also just peeping above the ground, and a merry hum continues during the warm sunshine amongst them. Pollen is being carried in in large quantities, and there is a prospect now of having a good supply of the golden syrup before another season closes. I am sorry to say I hear of much fatality in the apiaries. This is disappointing to many, but let us hope that better times are coming.—E. F. H.

North Cornwall Apiary, March 26th.—My diary for the last four weeks states that from February 22nd to March 18th the weather was very severe, snow lying on the ground, very hard frost, and biting east winds. No bees moving except on March 12th and 13th, when one or two were seen about for an hour in the middle of the day, when the sun was bright, although the wind was still very keen. The morning of March 18th brought a thorough change, the snow and frost had disappeared during the night like magic, it was quite warm, the wind having gone round to the south; the bees came out in large numbers, and the air was full of the merry hum of the little creatures rejoicing in good flight. I examined all my stocks and gave them all clean floor-boards, which were much needed. One stock had dysentery badly, but I set that right; the rest were free and healthy. The very severe weather since January 11th (when I was last able to examine my apiary) had sadly lessened the numbers in my stocks, and I found a quantity of dead on the boards. Since March 18th the weather has continued mild and warm, and the bees have been able to have a flight more or less *every* day, although on some days the wind has been high and the rain falling in heavy showers. Pollen also has been gathered freely at times. —The Manager, *Roue, Bodmin.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

Africander.—*Self-management.*—No; your plan would not answer. Excluder-zinc would prevent the egress of drones as well as the queens, the entrance would be blocked, and the bees would perish from suffocation. If the bees must be left to themselves, place the supers on the hives at the proper time, allowing room enough in the lower hive and leave the bees to their own devices. Twenty years ago we followed this plan with a dozen hives, and had no cause to regret it, our supers being well filled and no swarms were lost. The hives should occupy a cool and sheltered position where the sun's rays are excluded. Ours were placed in a cool out-house, with wide entrances through the walls. Use no excluder-zinc *anywhere*.

Fifer.—*Moths in Comb.*—Probably the comb contains both eggs and larvæ of the honey moth. The application of sulphur fumes to destroy the moth will have no injurious after effect when given to the bees.

J. P.—*Spraying Dysenteric Combs*—Either salicylic acid or carbolic will answer the purpose. If the former, use Mr. Cowan's receipt, p. 151 of his *Guide Book*. If the latter, use one part carbolic acid to nine parts of water. Glycerine will cause the acid to mix with the water.

Beeswing.—1. *Honey Confectionary.*—You will find receipts for confectionary in our back numbers; also see pamphlets by Mr. Cheshire and T. G. Newman, *Honey as Food and Medicine*, the latter an American, and sold by Mr. Neighbour, 149 Regent Street. 2. *Mouldy Combs.*—Reserve the mouldy combs in a dry place without spraying, and give them to full colonies or to swarms, which will soon polish and make use of them. 3. *Two-year-old Combs.*—The only use you can make of the two-year-old combs is to melt them down at a temperature of 200° Fahr., when the wax will set in a cake on the top and the honey will remain in a liquid state below, and may be used for bees, &c.

A Beginner.—*Two-storey Hive.*—We advise you to leave the hive as it now stands. As the bees increase in numbers they will descend and build out the combs in the lower storey, which the queen will use for extending

the brood-nest. When the lower compartment is partly filled, sectional or other supers may be placed above the two divisions, or another storey may be used for obtaining extracted or super honey.

A. K. B.—*Bees perished. Recommencing.*—You can only purchase, at the present time, '*stocks*' or '*colonies*' which have passed through the winter, and for these you would pay a high price. We advise you to wait and purchase '*swarms*,' which may be obtained reasonably in the early part of June, and introduce them to your hives of comb from which the bees have perished, hives, frames, and combs having been cleansed and disinfected.

J. W. R.—*Proposed transfer of Bees by inversion of Skep.*—We should prefer to drive the bees and transfer to a bar-frame hive now, and then by stimulation get them forward to gather the harvest when it comes. Refer to subject of transferring on p. 3.

W. G. S.—1. *Foul-broody Stocks and Combs.*—As you have had foul brood in your apiary you would do well to feed the other stocks, although apparently healthy, with food containing the 'Cheshire cure.' 2. We should melt all combs which are not in use which have been affected by foul brood.

A. B. Johnston.—1. *Candy.*—No; the hard stony candy sold by grocers is totally unsuitable for food. Bee candy should resemble the cocoa-nut candy sold by confectioners, without the cocoa-nut. 2. *Boiling old Combs.*—If you have no wax extractor, tie them in a canvas bag with a weight to make them sink and boil them in the copper, crushing and squeezing them while boiling. You cannot get out *all* the wax, the dross will always contain a little. 3. *Bumping Bees for Transferring.*—No, you will find in practice that the bees are none of them crushed by the combs. You do not need to use such violence as to dash the combs against each other, as you express it. 4. A three-pound swarm contains 15,000 bees.

J. J. S.—*Expenses incurred by a Beginner.*—The firm you name have the reputation for supplying good articles, and although the sum you name for a hive and a stock of Ligurian bees together with 'etc.,' which may cover many expensive items, seems high to you, we fancy you got value for money. The charge for the articles you now require is not unreasonable, nor is that for man's time if you are at present unable to attend to your own bees. The cheapest way to commence bee-keeping is to get a stock in a skep, and when you are sufficiently experienced in handling bees get a hive such as you now purpose buying, transfer the bees to it yourself. As to advice, our columns are always open to inquirers, and if you will consult us in your difficulties we will try and help you. No doubt there are other bee-keepers in your neighbourhood, and *all* bee-keepers are ready to help one another. Failing friendly help you had better engage an expert for a day, or, better still, learn yourself.

J. B. S.—*Dead Bees.*—The bees forwarded when they reached us were actively alive; the purlieus of the Seven Dials seem to have a revivifying effect on apparently dead bees. The bees are not pure blacks; they are hybrids, having a slight strain of Italians. 2. *Clover.*—If the clover is, as you state, *Trifolium pratense*, it is valueless to common hive-bees, though producing a large quantity of honey. The proboscides of these bees are too short to reach the nectary. It is said that the Ligurians and the Eastern races of bees (see 'Useful Hints, p. 137) are able to work upon it, as also humble bees.

A. Wodner.—*Bees in a Trance.*—Your 'bees that had been dead some time,' and which were restored to vitality by being placed in a warm room, were only in a trance, caused by a sharp nip of cold. It is a case that frequently occurs.

English Queen.—Please forward name and address.

H. K.—1. *Mulberries.*—The flowers of the mulberry do not secrete honey in any quantity. The little that is produced is secreted by the female blooms. The flowers are also open at a time (in June) when other plants of better honey value are in blossom. It is not a desirable bee-plant. 2. Take a bee up by the wings. 3. No.

F. L.—*Two-year-old Combs.*—It depends very much upon the state of the combs as to whether they are worth keeping. If tough, clean, and free from moth, they may be used in colonies which are being worked for extracted honey, and for wintering bees upon. Bees winter much better upon tough old combs, if not too full of pollen, than upon new ones. These combs should be placed in, or near, the brood-nest about the end of August, or early in September.

Tyro.—*Feeding.*—Lacking combs, feed your bees with syrup, rather thick, of about the consistency of ripe honey. Any of the bottle-feeders, of which we consider the 'Raynor' one of the best, will answer your purpose. Turn on all the holes, thus allowing the bees to take the syrup in quantity, and keep the bottle replenished daily—feeding at evening—with warm syrup, until the bees have stored sufficient—say from 8 to 10 lbs.—for their wants until honey comes in from the fields. By thus acting you will save your colony.

M., *Rathcelmond.*—The specimen enclosed is a dwarf, slow-growing shrub called Daphne mezereum. The flowers are delightfully scented and appear in March. The light-coloured species referred to is an albino form of the above. The berries are ripened in the autumn, assuming a bright coral colour. It is propagated from seed sown in spring.

A Kent Bee-keeper.—You have been very successful in your treatment of your condemned bees, and should reap a good harvest for your pains. You may well get honey from the fruit blossoms, as your stocks seem from your description to be strong. As you have no ready-built combs to give to your bees, as the brood-nest enlarges uncap the outside combs one at a time, and as a comb becomes emptied place it in the centre of the brood-nest to be filled with eggs; do not give foundation until the weather is warmer. You need not feed while you are uncapping stores, but do not forget the great consumption of stores when breeding is going on, and feed before they are exhausted. The stock in which you found the stains is suffering from dysentery. Feed it with syrup containing salicylic acid. The flight of a queen when examining a stock is unusual. Your method of packing for winter is good, as is proved by the present state of your bees, with the exception of the dysenteric one, the cause of that being probably unsealed stores when wintering up.

F. McK.—*Queenless Stock in Skep.*—Drive the bees, and unite with one of your bar-frame hives.

East Dulwich.—1. *Winter Passages.*—It is very important that bees should have the means of passing from one comb to another, either through holes or by the means you have used, sticks laid across the frames to give access under the quilt. In skeps the combs are not attached to the sides all the way down, but only as far as they are used for honey storage. 2. *Combs behind dummies become mouldy.*—Uncap the remainder of the cells, and the bees will soon clear the honey out. The mouldiness will not matter. 3. *Altering Frames for Metal Ends.*—You have only to cut off the shoulders with a penknife, and they are ready to receive the metal ends. Hives on the 'cold system' are frequently made with broad-shouldered frames. There is no reason against it.

W. J. R.—*Dysenteric Bees.*—Your bees have died of true dysentery; not that distension of the intestinal canal with pollen residue, which is called dysentery by bee-keepers generally, because the question has not been studied. The substance in the comb which excites your suspicion is simply pollen with a slight coating of honey over it. The disease seems only to be developed when surrounding circumstances are favourable, and the hive will not be injurious for other bees. The combs may, in my opinion, be used without risk. The honey, if the combs are not soiled, is not damaged.—F. C.

R. J. Slacke.—*Dead Queen and Bees.*—The queen which, with many other bees, you found dead outside the hive was filled with an organism now under culture and investigation. I suppose it to be the *Mucor melittophorus* of Lichtheim, but cannot yet make any statement. The organism may have developed in the tissues after the queen's death, and not have been the cause of it. The

same organism was found in three of the accompanying bees. The bees in this case, as in all others, have not died without a reason, but from causes which, because obscure, have too long remained unrecognised. Time will be required for getting the very involved question of apistical diseases into something like system, but I can now see that progress of a solid kind is being made.—F. C.

Col.—*Not the Queen.*—1. The bee encorked was a worker-bee, not the queen. 2. *Index.*—The index of the volume will be given at the end of the twelve months. 3. *Section Racks for* $1\frac{1}{2} \times 1$ *Sections.*—If you have any of that size sections in stock by all means use them up. If you intend to adopt the size $4\frac{1}{4} \times 4\frac{1}{4}$, which is likely to come into general use, the plan you propose to alter the racks is a good one.

We have received from Mr. W. P. Meadows, of Syston, near Leicester, several articles serviceable in the apiary, among which we may mention Locke's Feeder, the principle of which was mentioned in last week's *Journal*, its shape differs from that of the engraving, being circular; Simmins's Champion Frame Feeder, the principle of this was given in preceding volume, p. 360, and is applicable to all Mr. Simmins's feeders; Simmins's new dry sugar-feeder, used at top of bars for hole in quilt (see p. 188, vol. 12); also a shilling feeder. All these articles are strongly made, and reflect credit on the manufacturer.

We have also received, from Mr. S. Simmins, Rottingdean, near Brighton, *A New Era in Modern Bee-keeping: Simmins's Original Non-Swarming System as adapted to Hives in Present Use.* A notice of which will appear shortly.

Information is desired by a correspondent on bees and and bee-keeping in South Brazil.

The Second Part of Mr. Blow's 'Among the Queen-Raisers in the North of Italy' will be given in our next Number with Illustrations.

Business Directory.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' *whose orders amount to Five Pounds per annum, will be inserted Free.*

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

Show Announcements.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

A BOOK ABOUT BEES. Their History, Habits, and Instincts. Together with the First Principle of Modern Bee-keeping for Young Readers. By Rev. F. G. Jenyns, Rector of Knebworth, Member of the Committee of the Bee-keepers' Association. With Introduction by the Baroness Burdett-Coutts. Published at the request and under the sanction of the British Bee-keepers' Association. Crown 8vo. cloth extra, 3*s.* 6*d.* About Sixty Illustrations. London: (134)
Wells Gardner, Darton, & Co., Paternoster Buildings.

NOTICE.—For late Pollen grow SUNFLOWERS. SEEDS from Best Varieties, 3*d.* per Packet. Address W. Hollins, 9 Tillington Avenue, Stafford. 128

SEEDS of the BEST HONEY-PRODUCING PLANTS known, for Garden and Field cultivation, in 3*d.*, 6*d.*, and 1*s.* Packets. One Shillingsworth free, with cultural directions if required. The following sorts are the best that can be grown:—Borage, Clover (White, Red, and Alsike), Catnip, Figwort (the famous Simpson honey plant), Golden Rod, Horsemint (the honey plant of Texas), Honey Locust, Horehound, Motherwort, Mustard, Marjoram, Melilotus leucantha, Mignonette, Limnanthes, Rosemary, Rocky Mountain Bee-plant, Spider Plant (this is at the head of all American honey plants), Thyme (Lemon), White Sage (the Californian honey plant), Wallflower (Harbinger and Tom Thumb). Plants of Figwort (2 years old), 5*s.* per 100; Myrobella Plum (2½ feet high), 6*s.* 6*d.* per 100; Thyme, Marjoram, 5*s.* per 100; Golden Rod, well rooted, 6*s.* per 100. Half quantity half price. Address Hy. Dobbie, Cringleford, Norwich.

THE CHEAP APIARY.

BROAD-SHOULDERED FRAMES, 1*s.* 8*d.* per dozen, or 18*s.* per gross. FRAMES, with plain Top-bar, 10*d.* per dozen, or 9*s.* per gross. All Standard size HIVES equally cheap. Apply

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THE
BRITISH BEE JOURNAL

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

EXHIBITION AT SOUTH KENSINGTON.

It is hoped that satisfactory arrangements will shortly be made for holding a thoroughly representative exhibition of English bee-keeping in the Conservatory adjoining the Albert Hall at South Kensington. It now remains for his Royal Highness the Prince of Wales as executive President of the Indian and Colonial Exhibition to confirm the proposal.

The sources of income which can arise from the exhibition are very insignificant. No charge can be made for admission. The exhibition can, therefore, only be rendered possible by a very liberal response to the appeal now being made for donations and subscriptions to the Guarantee Fund. These funds now amount to about 85*l*. This amount must be considerably increased before the Committee can arrange such an exhibition as will be creditable to the British bee-keeping industry.—JOHN HUCKLE, *Sec., April 6th.*

DOUBLING FOR EXTRACTED HONEY AND PREVENTION OF SWARMING.

(*Continued from p.* 136.

In working three or four storeys we proceed at first as already described, and when the stock hive is crowded with bees and brood we place on it a similar hive full of empty combs, the frames being placed one and a quarter inches from centre to centre. It may be thought that this is giving the bees too much space at one time, but if the weather be warm, and there are plenty of bees, we shall not find it any too much. Still, should the weather be cold, we need not give them all the combs at once, but only five or six, closing the space with a division board, and pushing down a quilt on to the tops of the frames in the lower hive. In this way the capacity can be adjusted to the requirements of the colony, and, as the bees want more room, the division-board can be removed and more empty combs given. A frame of brood taken from the lower hive and placed in second storey will entice the bees up more readily, but we have rarely found this necessary, more especially if no queen excluder be used.

As soon as these two storeys are pretty well filled with bees add a third, but in this place your frames at $1\frac{1}{2}$ to $1\frac{3}{4}$ inches from centre to centre, as these combs will only be used for extracting, the two lower storeys, giving the queen ample room for egg-laying. It will not be long before the bees will be ready for a fourth storey, which is filled with empty combs and put between the second and third, bringing this last to the top.

The top hive will be filled and finished first and when all the combs are nicely sealed over the hive with its full combs is removed and another with empty combs placed between the second and third storeys. The combs can be extracted at once, or if we have plenty of these empty in stock the extracting can be left until later in the season. Some may imagine that it would be impossible for bees to fill such large hives, containing as they do about forty standard frames, but it is not so. These hives are after all not so very much larger than those so extensively used in some parts of Switzerland and France, and known as the Layens hives, which are not found too large. In these the queen has full liberty to lay to her utmost capability, the bees are never cramped for want of room, and swarming is entirely prevented.

It is true that all queens are not so prolific, and are not all able to keep such a large hive supplied with brood, but we do not tolerate such queens. We raise our queens only from the best stocks that have proved themselves most prolific, and all those not up to our proper standard are replaced by them. In hives with young queens bees are not so inclined to swarm, and this is one of the reasons why we have been able to work our apiary year after year without getting any natural swarms.

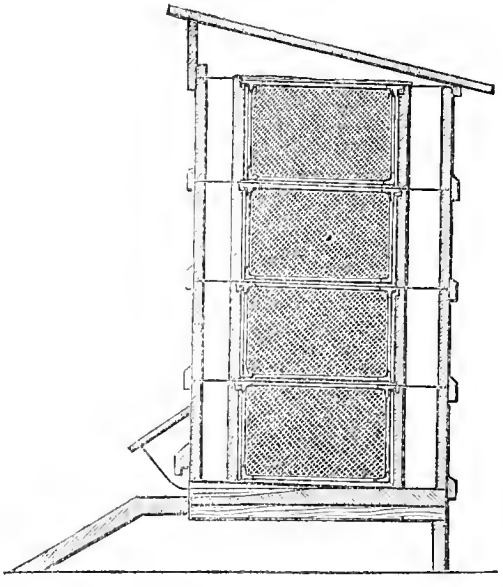
When we have left it to others swarms were not prevented, and we have a curious instance of this. In 1884, when we were away during the whole summer, we left instructions that no swarms should be allowed. Our man did not give the bees room in time, and the consequence was that we had a very large number of swarms, which he said he could not prevent. In 1885 we were at home during the swarming season, and by giving the bees plenty of room in advance of their requirements we had not a single swarm, and the bees never once showed any inclination to swarm.

We do not know in what the 'original non-swarming system' advertised in our columns consists, and how it differs from the plan we employ, but we may say that with our system there is no desire to swarm, and that not only, as the advertiser says, '*no other bee-master has yet succeeded in so managing that the bees actually have no desire to swarm*,' but there are and have been for a number of years bee-masters who have not only succeeded in preventing this desire, but have also worked with this object in view.

To prevent swarming we must have young and vigorous queens, and these must have sufficient room to lay to their utmost. The bees must not feel cramped for room

when honey is coming in, but must have as many empty combs as they are likely to require for storage; and if these requirements are complied with, they will not only not swarm, but, what is much more important, will have no desire to swarm. Much valuable time is frequently lost in preparations for swarming, which also unsettles the bees, and this at the most valuable season of the year, when perhaps they might be collecting 15 or 20 lbs. of honey a-day.

To work this system to the best advantage it is necessary to have a large number of frames of empty comb. We have several hundreds of these which we use over and over again, and all the storeys consist of the same sort of hive. We have used shallow supers (Neighbour's frame supers with straw sides), 6 in. and some 4½ in. deep, because we had them, also Carr Stewarton body boxes; but we found that ordinary hives did just as well, and there was the great advantage of using only one size of hive and one sized frame, which can be used either for brood or super. The ordinary entrance would be much too small for these hives, we therefore raise them one inch in front by means of two wooden wedges, and this allows the bees to go in and out on three sides of the hive. The illustration, taken from the seventh edition of the *British Bee-keeper's Guide Book*, shows the arrangement of these hives, and also the way they are raised from the floor-board.



To protect the bees from the heat, we have outer cases also, all the same size, which must also be raised so as to allow a current of air to enter at the bottom and have free circulation between them and the hives. The cover can also be raised for the same purpose. One advantage of this system is that, with the exception of the first hive taken from the top, all the extracting can be done at the end of the season, and the honey left to ripen in the hives. Another is, that we need not trouble about swarms. Our hives may be of the simplest construction, all of one size, and no special supers to trouble ourselves about.

When we remove our hives, we get them cleared of bees automatically, in the following way:—

When we insert the hive of empty combs between the second and third storeys, the third storey becomes the fourth, and the fourth, which we intend to remove, is raised one storey higher, making it five storeys. This is done early in the morning; and between the fourth and fifth storeys we lay a piece of American oil-cloth. The bees in the fifth storey are now entirely shut off from those below them. On the top we place a board, having a hole six inches square, communicating with a box the same size; and this is fitted with a trap constructed in such a way that the bees can get out, but cannot get back. Over this we put the cover, but in such a way that daylight is not excluded from the front of the trap. As soon as the bees find themselves cut off from their companions below they rush to the trap, and by degrees the top hive is emptied of bees, which return to the hive by the entrance below. In this way there is no exposure of sweets, and, consequently, no robbing. The hive is removed in the evening without a single bee in it. At the end of the honey-season, the top storey is removed in the same way, the combs extracted in the early evening, and the next morning the hive with the empty combs is put in the place of the third storey, and this is raised to clear it of bees as described, and the honey is again extracted in the evening.

When all our hives have been treated in this way there will remain the two body hives, which have not been interfered with, and the third storey which has been extracted. We can then either place the hives with the extracted combs on them for the bees to clean, or give two or three boxes to one hive. The two lower boxes are left until we prepare our bees for winter, when we shall be able to get all the brood into one hive, and probably find a lot of honey in the second storey, which we can either extract and feed up the bees with syrup, or give them enough sealed comb for winter stores. If properly managed our colonies will contain a large population, and if breeding has been kept up a large number of young bees, which will enable them to winter well. The empty combs are fumigated with brimstone, and put away for use in the following spring. Hives managed in this way will give the maximum of honey with the least amount of labour.

PREPARING FOR WORK.

Once more winter is over and spring has made its appearance, and with the genial weather the song of the birds is heard from early morning, and, what is even more pleasurable to the bee-keeper, his bees are contentedly humming all day while they hasten to and fro in search of pollen and honey.

With the bee-keeper winter should not have been an entirely idle time, and at any rate some portion of it ought to have been devoted to preparing hives, supers, &c., and getting appliances in order for the coming season's work. The prudent bee-keeper would have done so and would also have purchased all he required during this period. It is a time when manufacturers can supply goods very quickly and are glad to do so, as they have very little to do as a rule besides preparing for the summer demand. But how many bee-keepers never think of ordering anything they may want until they actually require it, and then either send the dealer a note or telegram to send it on at once. This is hardly fair, because dealers may not be prepared to supply the article at once, and is then blamed when it is really the fault of the bee-keeper. To those who have not given their orders for what they may want we should say, Do so without delay, as it may save you a great deal of trouble later on. A stock of comb foundation and sections should be laid it at once.

If it is determined to go in for only extracted honey on the doubling principle see that sufficient hives and frames of empty comb are on hand. The hive need be of the simplest kind, provided it be of the right size and rabbets cut on two sides for frames to hang, is all that is needed. At least, one division-board must be supplied to every three boxes, but two would be better, also one floor-board with entrance passage cut in it and alighting-board to reach nearly to the ground. This we consider saves the lives of a large number of bees. Outer cases and a roof

can be used for protecting the bees from the heat of the sun. One set of quilts is required for each hive. If the bee-keeper be short of combs he must prepare a number of frames with comb-foundation of a proper thickness, that from six to seven square feet to the pound being the best for this purpose, and great care taken that it is obtained perfectly pure. The wired foundation is much stronger and is used with less risk for extracting. The only other requirements besides hives for working for extracted honey are a smoker, extractor, uncapping knife, and a can for extracted honey. To these may be added, but are not absolutely necessary, a box for carrying combs, and a comb-stand for placing combs whilst manipulating; and nervous bee-keepers should provide themselves with veils and gloves.

Those who intend to work for section honey will not want so many hives and frames, but, on the other hand, they must have ready in addition to all the other things mentioned racks of sections. There should be enough racks prepared to work at least three tiers of 1-lb. and two tiers of 2-lb. sections. Each section must be folded and fitted with a piece of thin foundation, which must not be heavier than twelve feet to the pound. Many sections are completely spoiled by the manner of fixing this foundation, putting so much molten wax on each side as to quite unfit it for eating. The best way of fixing the foundation is with the Parker machine, as this instead of adding wax thins the sheet out just where it comes in contact with the wood. When thin foundation is fixed in this way there is not that 'fish-bone' often complained about. The sections we prefer are $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ for 1 lb. and $5\frac{1}{4} \times 6\frac{1}{4} \times 2$ for 2 lbs., and travelling crates to hold one dozen each must be provided. Do not forget tin separators; we have tried wood and other substances, but find sheet tin the best, and be sure they are the proper width.

We have not mentioned feeders, as all that are likely to be needed are most probably in use at the present moment. Be sure to have spare hives for swarms if you are not working on the storifying principle, as it is very annoying to find that there is no hive into which to put the bees when a swarm comes out. All should be done without delay and everything purchased before there is a great demand. If the bee-keeper makes his own hives and appliances let him do so now before the to him busy season arrives. *Semper paratus* should be the bee-keeper's motto.

LANGSTROTH'S NEW BOOK.

It is now nearly thirty years since the Rev. L. L. Langstroth, the celebrated American author, wrote his book called *A Practical Treatise on the Hive and Honey Bee*, which revolutionised bee-keeping, and made it a pursuit no longer a matter of chance, but as certain as any other rural industry. It was at that time and still remains the best written, most complete and practical treatise on the subject. Although it has passed through several editions, improvements in bee-keeping and discoveries have been made so rapidly that Langstroth has long cherished the idea of re-writing it, embodying all our later acquired knowledge, but has always, owing to bad health and advancing age, been hindered from doing so. We are sure our readers will be as pleased to hear, as we are to be able to inform them, that at last this idea is about to be realised, and that Mr. Langstroth has secured the assistance of Mr. C. Dadant, one of the leading and most advanced bee-keepers in America. Mr. Dadant has shown himself, by his writings and work, to be, like Langstroth, a profound thinker, a careful observer, and a pleasant writer; and we have every reason to believe the great experience of these two men will enable them not only to treat the subject exhaustively, but also to give us a work far in advance of anything we have at present on bee-keeping. We remember with what interest we read and studied Langstroth's book in our earlier bee-keeping days, and how we admired his clear and facile style of writing.

We were at that time using the Woodbury hive, but we were so fascinated by the simplicity of the Langstroth hive, which has a frame without broad shoulders, distance-pins, or anything of the sort, that we adopted it, and after using it so convinced were we of its superiority over those we were using that we removed the racks from all our Woodbury hives and have ever since done without them. This style of hive is at present more generally used in America than any other: and, although a few alterations have been made in the details of construction, the great principles so lucidly propounded by Langstroth thirty years ago are still the same.

The cost of the work has hitherto in a great measure restricted its sale, and we hope that it may be rather reduced in price, so as to bring it within the reach of a larger number. For the amount of matter it contains it cannot be called a dear book, as it is closely printed and has not the large print, wide margins, and broad spaces between the lines so common in works got up for the purpose of increasing the publisher's profits, when the information given in two or three volumes could be easily and advantageously put into one. Nor is it, like works merely written to gratify the vanity and ambition of their authors, verbose, spun out to an unreasonable length, in which other people's discoveries are unscrupulously appropriated, and theories tending rather to bewilder the bee-keeper than to assist him are advanced. Knowing as we do the character of the two men now engaged in re-writing this work, we are certain that it will be done honestly, that it will be clear and concise like the former edition, free from verbiage, and clearly point out the way to success with the sole object of advancing bee-keeping. We understand that the work is also to be brought out in French soon after the appearance of the English edition.

GLEANINGS.

In the *Bee-keepers' Guide* Rev. Dr. M. Mahin says: 'Syrian bees are much more prone to have laying workers than Italians or Germans, but fortunately they are much less troublesome. I have had more than half-a-dozen cases this season, but in no case have they given me any trouble. They have not interfered with the hatching of young queens, nor with the queens after they were hatched. As soon as the queen was hatched, or if not, as soon as she began to lay, they ceased operations, and the only damage done was the occupying of a few cells with worthless drones.'

In the *Bee-keepers' Magazine* G. W. Demaree describes his new frame, which does away with the necessity of a honey board. It has a wide top-bar with a longitudinal slot in it, and underneath this another bar to carry the foundation. Between the two bars there is sufficient space for the bees to pass up into the sections. Mr. Demaree says if the opening is in this position the queen will not go up above the top-bar. He also insists that in practical honey-producing there is no necessity for opening the brood department of hives every few days, after the fashion of novices, who mistake manipulation for practical work. A practised eye is all that is needed to know when it is necessary to open the brood department.

The *Rural World* says, 'Bee-keeping is, strictly speaking, a branch of agriculture, and many a farmer is to-day getting a greater return from his investment in bees than that received from any other stock; but might I here say that bee-keeping as a pursuit has to-day become a "speciality?" The man who enters upon this pursuit (leaving the question of capital aside) must be one endowed with a physical and mental ability—a man with open eyes and ears, and a man for emergencies,

prompt to do what is necessary at once, and who is not easily discouraged.'

In the *Bulletin d'Apiculture de la Suisse Romande* Frère Henri describes the manner in which he cured foul brood by means of thyme. He uses the common herb as grown in gardens. This is dried and put into an ordinary smoker, is set alight, and the dense smoke blown into the hive by the entrance. After doing this eight evenings he found the larvæ which had died from the disease before the fumigation now quite dry, and the new brood in a perfectly healthy condition. He continued the fumigations for another eight days, which ended in a complete cure of disease.

In the *American Bee Journal* W. M. Woodward says: 'Young bees are free commoners, whether of any kind or race, so long at least as there is need or use for them in the hive. In Italianising some of my colonies this year I have had a good opportunity for observing the bees change from one hive to another and have seen both drones and young workers pass directly from one hive to another and enter either hive equally unmolested. After observing this, I felt sure that young bees might easily steal eggs from any hive to build queen-cells, as from three colonies of Albinos nearly all of my black colonies received more or less yellow bees.'

In *Gleanings* Professor A. J. Cook says, that plant-lice (family Aphidæ) are very common, and there are few specimens of plants that do not harbour or nourish some species. Their presence is often denoted by ants running up and down the plants in quest of the nectar they secrete. These plant-lice are always active, and in almost all colonies some, usually but few, have wings. What a wise provision! The development of wings is ever at the cost of nourishing material, and so, unless needed, had better be absent. They are only wanted in a few, which may fly away and so prepare to distribute and the better propagate the species. Bee-keepers, he says, wisely copy from such examples given by nature, and as soon as queens have done with their wings—after mating is over—they are cut off. This is not against nature. Plant-lice work almost wholly on the leaves or green tender twigs. It is not uncommon for the leaves to curl up. Sometimes, as on the elm and poplar, galls are formed. The curling leaves and galls serve as both food and house for the lice. Such plants obey literally the beautiful commandment 'If thine enemy hunger, feed him,' for such plants bestow both shelter and food upon their most hurtful enemies. Nearly all these plant-lice secrete nectar, some from two tubes (nectaries) protruding obliquely from the back of the abdomen; others from the general surface of the body. This is a secretion, and if experience proves it to be always wholesome it should not be denounced or regarded with disfavour any more than milk, which is wholly analogous in its origin. This nectar serves the lice in attracting bees, ants, and wasps, which act as sentinels and keep birds and parasitic insects from destroying the lice, while at the same time the nectar serves the bees and ourselves as food. Professor Cook says he has often called attention to the difference between this plant-louse (Aphides) nectar, and that from the bark-lice (family Coccidæ). While the former is pleasant and wholesome, in all cases as far as he has examined it, the latter (which comes from the flat scale-like motionless bark-lice) is bitter, strong, dark, and unwholesome. It is certainly unfit for table use, and he should not deem it fit food for bees.

The *Indiana Farmer*, speaking of the depression in the honey trade, says,—'Style of package has much to do with selling honey. With many the idea prevails that there is an over-production of honey, hence the depressed prices. Comb honey now sells at from 14 to 18 cents (7*d.* to 9*d.*) per pound wholesale, whereas a year or two since it readily brought 20 to 25 cents (10*d.* to 12½*d.*) But sales are slow in almost every department of trade.'

AMONG THE QUEEN-RAISERS IN NORTHERN ITALY.

By Thomas B. Blow, F.L.S.,

Author of *A Bee-keepers' Experience in the East*, &c.

(*Continued from p.* 96.)

Leaving Bellinzona I went on to Locarno, and visited many country apiaries among the mountains around, and, from the statements made by the bee-keepers, it would seem that the average per stock for honey was fairly high: this result would be probably due to the united qualities of the district and the bees, the country being very fertile indeed. Then taking the steamer down the lovely lake of Maggiore, with its vine and tree clad hills, past the Borromean Islands—a most delightful journey, with lovely views of the distant Alps, and with weather most perfect though so late in the season—to Arona, and thence per rail to Milan.

Though bees were principally the object of my journey I could not forbear taking a day to see the sights of Milan, foremost amongst which is the lovely cathedral of white marble, with its delicate tracery and fine statuary: the Milanese, too, are justly proud of their electric lighting, which is certainly very perfect, and the effect at night in the Grand Square, with the cathedral in the background, is very striking. Most of the very fine shops, too, in the square and its arcades are lighted with the small incandescent lamps. Dr. Angelo Dubini was here, of course, the first man to see, his name being known far and wide. I found that he had been taking a very active part in the bee show held a few days before I arrived, and that he had now gone to his country residence to rest: he lives at Cassano Mognogo, near Gallarate, about an hour's journey by rail from the city; and on arriving at the station, his mansion, called the Villa Dubini, was pointed out to me on the top of the hill about a mile distant. A pleasant walk along a road, crowded with country people in their best clothes looking very picturesque—it was Sunday, their holiday day—soon brought me there, and a most cordial reception I received from the Doctor. His house commands most charming views, being on a hill in the midst of flat country, and is surrounded with beautiful gardens and terraces. Though not a raiser of queens, he had so much to show me in other things that the best had to be made of the time, as I could not stay longer than the evening. By far the most clever theorist in bee-keeping that I had met abroad, yet Dr. Dubini is still sufficiently practical; his great forte is the invention of appliances, the number that I saw being Legion. A swarm-catcher (Fig. 1) struck me as being a most useful invention; and as, in this country nothing of the sort is ever used, and swarms are frequently lost, a description may not be out of place. It is a bag made of enamelled cloth, with the shining side inside, and is carried on a long pole; the hoop around the top of the bag is jointed, and after the swarm is shaken in, by means of a pulley and a string running down the pole, the hoop is closed; the inside being shining and slippery there is no difficulty in shaking every bee out into the hive, or wherever they are to be put. One or two little pieces of wire cloth are

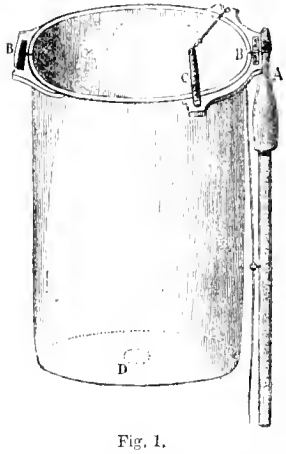


Fig. 1.

fixed about it for ventilation, though the swarms should not be kept in it longer than needful.

A dry sugar-feeder (Fig. 2) next calls for attention,

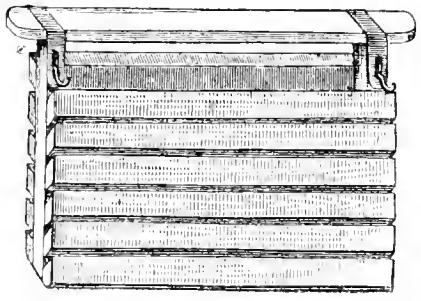


Fig. 2.

and for simplicity it is certainly unsurpassed. It consists of nothing more than an ordinary bar-frame, having 1-inch laths with bevelled edges nailed on each side; the sugar is shot in from the top, the affair is placed in the hive, and the bees stand on the bevelled edges and take the sugar. I was assured that it was most effective, and I think it is a great advantage on the clumsy tin dry sugar-feeders, so many of which have been brought out in this country. Dr. Dubini is an advocate of dry sugar feeding at certain times of the year. We have heard so much, too, of late about the ways of introducing queens to stocks in this country that I was glad to see a little of how it was done in Italy. Dr. Dubini does not introduce queens direct, and without caging; nor does he put a bar of comb on which are bees and queen into the middle of the stock requiring a new queen without due precaution. For a queen alone a pipe-covered cage, with an arrangement to liberate the queen without disturbing the bees, is used (Fig. 3). I found that he agreed with me that the most important thing was not to disturb the bees at the time of liberation of queen, which, if done, was generally a source of trouble, the queen either being killed or encased. Then, if a bar of comb, queen, and bees be introduced, a wire cage to take the whole is used with an arrangement for uniting them together quietly. (Fig. 4.) I may say that I met no one in the course of my journey who had, with any degree of success, practised direct introduction.

Fig. 3.

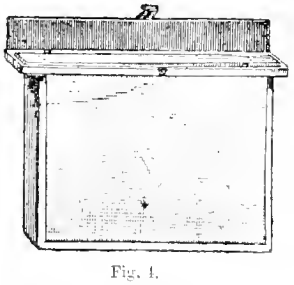


Fig. 4.

A good idea for grafting in queen-cells is here shown (Fig. 5). We often spoil a nice sheet of comb by cutting out a piece containing a queen-cell from one comb, and grafting it into another. By using this contrivance the piece coming out of one comb fits into the other, and so both combs are kept in good condition. It is simply a piece of tin with the edges filed sharp.

Fig. 5.

The getting rid of bees from supers has always been a matter of some little difficulty to beginners here, and this device (Fig. 6) is certainly very simple and effective. A plain box with a door at one end is taken, and at the top a long wire gauze tube is fixed. The supers to be rid of bees are put inside the box, and, of course, the bees fly to the light, and escape at the top of the tube. This box may be placed in the open air, as there is no danger of other bees

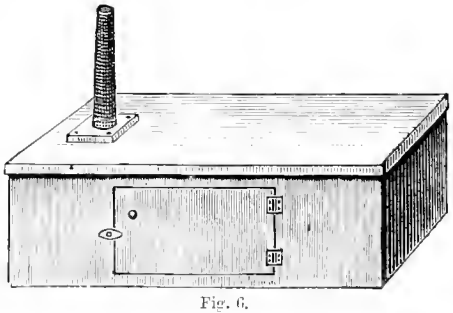


Fig. 6.

entering; they may try to do so, but always try to enter at the base of the tube, and, of course, cannot: they have not the sense to go to the top of the tube and down. The simplicity and cheapness of this should cause it to come into general use here. Dr. Dubini keeps his bees in hives that are an invention of his own, which are a kind of cross between the ordinary upright Italian hive and the English bar-frame hive. (Fig. 7.) The frames

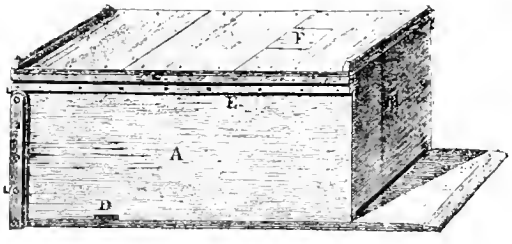


Fig. 7.

can be taken out from the back by means of tongs, (Fig. 8), (these tongs are in universal use in Italy, Austria, and Germany), or the top can be removed, and the frames lifted out in the same way as an ordinary bar-frame hive. Double-walled hives are not in use, as the climate does not seem to necessitate them. The supering arrangements are of a very

Fig. 8.

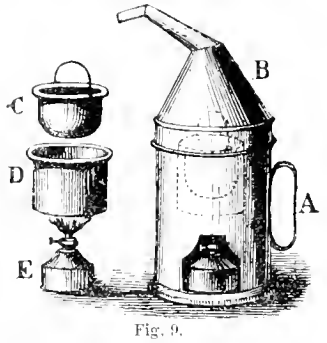


Fig. 9.

primitive kind, simply a rough box with bars in it; the small opening F in Fig. 7 shows where bees enter into the super, and though I saw a few sections they were certainly far from our standard in point of quality. In the art of obtaining honey in comb the Italians are far behind us, and I believe much surprise was caused at the Milan Exhibition by the sight of some sections which Mr. Cowan took.

Dr. Dubini had but few bees, having lost heavily through foul brood; as a remedy for this he believes in the fumigation with salicylic acid, and uses a machine of this kind (Fig. 9) which, so long as the temperature is not

too high, is probably effective. E lamp, D jacket, in which C (the receptacle for the acid) is placed, and which prevents acid from overheating. We took a walk through the village to call on the local expert, who keeps a large number of stocks; unfortunately he was from home. The village priest, too, close by, keeps a very large number.

Dr. Dubini has another, and usually much larger apiary at his farm close by, and this we next visited; the bee-hives were in a very fine bee-house, and one of his farm men seemed to take great interest in looking after these stocks.

All around here are quantities of lime and chestnut trees; these latter the Italians object to very much on account of the bad quality of honey. This farm apiary Dr. Dubini is going to replenish, as he assured me 'He could not live without his bees.' There was much more to see and hear, but the evening was drawing on, and after a most pleasant talk over dinner, the Doctor drove me down to the station, and I returned to Milan, after a most pleasant day spent in the company of one of the most genial and hospitable men I ever met.

On the outskirts of Milan—and just far enough out to keep bees—I found the establishment of Mr. Luigi Sartori, and he a most enterprising and business-like man; his depôt for hives, bees, and every sort of appliance, is, I believe, by far the largest in Italy. There were piles of hives of every sort, most of them modifications of the upright hives, some having the fronts most artistically painted and decorated. Barrel honey-extractors were, too, a great feature here, and very good ones they were, though the material used was zinc, to which Mr. Sartori thought there was no objection. The apiary, too, in the midst of the works was a very large one, and the way that some hundredweights of old comb were scattered about in heaps for the bees to clean certainly surprised me, and would have ruined any English apiary. The bees were doing their cleaning work well, and did not appear to get angry, or to rob. Mr. Sartori said that he always did that thing with his old comb, and that no harm came of it. Besides his appliance business he was a large dealer in honey and wax, and the quantity in hand was very great, and the quality of some of the samples that I tasted very fine indeed. The apiary at the works was not, of course, used for queen-rearing, but there was a larger apiary in the country kept for that purpose, and Mr. Sartori ships a great quantity of queens—to America principally, though this year a lot have been sent to India. The bees were very bright yellow indeed, so much so that I really thought that some Eastern blood must have been introduced among them; and some of the queens shown to me were very fine—the largest by far that I had ever seen. Mr. Sartori had been making a great display at the late exhibition in Milan, and I was much interested in seeing some of his exhibits, more especially his collection of bees in spirit. The number of prizes he had taken was very large.

With regard to the merits of Mr. Sartori as a queen-raiser, not having seen his queen-raising apiary, I am unable to say much. However, as a manufacturer he is evidently an advanced man, who keeps well abreast with the needs of the time.

On my way to Bologna I saw many country apiaries, some of them having the hives ranged on shelves on the fronts of the farm-houses. Bologna is a kind of centre of queen-raising, at least from advertisements I had always thought so; but on inquiry I had some difficulty in finding some of the so-called queen-raisers, and ascertained that, in some instances, they were merely agents, who knew nothing about queen-rearing, and that their sole business was to sell queens.

However, in Lucio Paglia and Josephine Chinni I found two conscientious queen-raisers, though, perhaps, their methods were not so scientific and advanced as in the apiary I described in my last. Mr. Paglia is a queen-raiser on quite a large scale, the largest concern of the sort I had seen; he has two apiaries, one at Castel St. Pietro d'Emilia quite in the country, this being devoted entirely to queen-raising; and another, an imposing affair in the Public Gardens, just outside Bologna, which is devoted principally to honey-raising.

I took train to Castel St. Pietro, and was very kindly received by Mr. Paglia, who is also a wine-grower and large farmer, owning his own land, quite a large estate. He showed me over his apiary, consisting of a large number of hives scattered over the grounds round the house, and apologised for the apiary not being in such good order as he could wish, as he was just rebuilding his residence, and remodelling the whole place.

His system of queen-raising was very good, and he uses a great number of rather large nucleus hives for the raising and fertilising of his queens. Though very careful in the selection of his stocks for rearing queens from, he does not go in for the elaborate system of getting the accurately built rows of queen-cells, like Mr. Pometta; nor does he consider it so needful to take all larval brood out of the hive, while queens are being reared.

Mr. Paglia went back to Bologna to show me his apiary there in the public gardens; and he had the largest and prettiest bee-house I ever saw; it was fully 150 feet long, with a fair-sized room at each end for packing and storing honey, &c., with rows of hives standing in the space between. There were nearly 100 hives in the bee-house, and they had been run chiefly for honey during the past season; and he told me that he obtained 1400 kilogrammes from these hives, and had left over twelve kilogrammes in each hive for winter use. The wind from the hills being cold here in the winter, necessitates the packing of straw in the spaces between the hives for protection. All these hives—and in nearly all the Italian hives which I saw—had glass dummies, and are left in the hives all the winter. Mr. Paglia may be considered as a most practical, enterprising, and reliable queen-raiser.

A lovely drive of fourteen miles through a charming hilly country, all well cultivated, brought me to Praduro-e-Sasso, where Madame Josephine Chinni has her apiary. All of us know, that in England a good many members of the scholastic profession go in for bee-keeping, and here we have a queen-raiser in the shape of the village schoolmistress assisted by her daughter. Madame Chinni, with whom I had dealt for some years, was delighted to see one of her English customers; and many inquiries I had to answer, relating to others in England who dealt with her, for she supposed I knew them all.

This concern is not a very extensive one, as Madame Chinni likes to manage the affair herself, rather than to employ labour to do it; as the result of personal management is, she thinks, far better. A good system of rearing prevails, carried on by a greater extent, by the subdivision of large hives, and further by the use of large nucleus-boxes. There were three apiaries—one at the house close to the school, and two on the hills—and the total turn-out of queens would be, probably, not more than between three and four hundred; sent principally to England, as Madame Chinni prefers to turn out a small quantity of a good article, rather than raise them wholesale. The home apiary was rather small, Madame Chinni having had the misfortune to get nearly the whole apiary of eighty stocks burnt last year. Praduro-e-Sasso is a most remote country place, far away from town or rail, and I here saw Italian country life in its primitive rustic simplicity.

Leaving Bologna, my only other call in Italy was on Mr. Fiorini at Montselice. Mr. Fiorini is a well-known man in the town, being a large builder; and I had no difficulty in finding him: and I knew that my visit to him would be of more than ordinary interest, from the fact that he was the only man in Italy, who had been to

the East to investigate the merits of the Syrian and Cyprian races of bees. Though he raises a few queens, yet he does not make the queen-raising a business, to the extent of the others upon whom I had called. He has a comparatively small apiary, and we went through several stocks together, and also examined the original stocks that he had from the East. The savageness of the Eastern races is not so apparent in Italy as in England; and Mr. Fiorini stated that he usually handles Eastern bees with about the same degree of ease as Italians; but he cannot see that, at least, in Italy they have any advantages over the native race. He was not desirous, he said, of doing much trade with England, as his dealings had not been satisfactory; and he complained bitterly of one firm who had obtained queens from him, and from whom he had not been able to get the money.

My experiences with Italian bee-keepers here come to an end; and though I remained in Italy for two or three days longer, yet it was at Venice; and in that silent city, with its watery highways, no bees were to be seen, and no bee-keepers were to be met with.

My next article will relate to bee-keeping in Carniola.

Selected Query.

[243.] *Is there any advantage in caging the queen during a honey glut, and thus preventing her from laying, and preventing the bees from swarming?*

We do not think there is, and the bees certainly do not work so assiduously when their queen is caged, and although bees are prevented from swarming we prefer to give the queen more room for laying and prevent swarming in this way.—EDITOR.

I think there is no advantage, and, with a proper system of management, there is no necessity for it, while it has many disadvantages, and in a large apiary would cause endless labour. A judicious system of doubling, on the storifying plan for extracted honey, and of tiering up for sections, will do away with all necessity for caging the queen in order to prevent breeding and swarming.—G. RAYNOR.

There is no advantage in caging a queen belonging to a stock during a honey glut, to prevent her producing brood, as the more bees in a hive the greater the weight of the honey collected. Very much more honey is collected by a strong stock that is not allowed to swarm, than if weakened by sending out a swarm.—WILLIAM CARR.

I do not consider there is any real advantage in caging the queen during a glut of honey. If we could be sure of a continuance of fine settled weather we may increase our harvest by so doing; but it must be at the expense of the future population of the hive, and also a loss of nearly a day caused by the disturbance in capturing the queen.—W. WOODLEY.

Caging the queen in this manner will induce the worst kind of swarming—namely, with young queens raised in her stead—while no present advantage in surplus will, as a rule, be obtained. But, of a certainty, the future prosperity of the colony is thereby impaired—in some cases, altogether ruined. A queen must be kept breeding the whole time, though with a brood-nest decreasing in size towards the latter end of the harvest. No other course will give permanently good results.—S. SIMMINS.

I should not recommend it, and do not think it necessary if additional space is given in tiering up racks of sections from time to time as the increase would warrant—or storifying with additional hives if working for extracted honey.—JOHN M. HOOKER.

This is a funny query!—very funny query indeed! and he would be a very funny clever fellow who could answer it in a way to be of benefit to the craft save that he advised *non-interference* with her majesty and her loyal subjects at such time and the giving of ample room for storing at top of hives.—R. R. GODFREY.

I do not approve of interfering in such a degree with the natural functions of the queen, nor do I deem it necessary or desirable to curtail the raising of brood at the period named, my experience showing me that in normal, *i.e.* strong, colonies, the workers are more than a match for the queen in securing possession of the cells. The preventative to swarming lies in the direction of giving ample space for both queen and workers.—J. GARRATT

I cannot say as I have never tried the plan.—C. N. WHITE.

ASSOCIATION.

WORCESTERSHIRE BEE-KEEPERS' ASSOCIATION.

A meeting of the Committee was held at Worcester on the 3rd instant, when there were present the Rev. E. Whitmore Isaac (chairman), the Rev. W. M. Kingsmill, the Rev. S. Latham, the Rev. R. T. W. Brayne, Mrs. Swinden, Messrs. C. H. Haynes, E. A. Dimmock, H. Goldingham, E. T. Footman, S. Tombs, and A. H. Martin, hon. sec.

The hon. sec. read a letter that he had received from Mr. C. Brown, resigning the appointment of expert to the Association; and it was proposed by the Chairman, seconded by the Rev. W. M. Kingsmill, and carried unanimously, 'That the Committee receive with regret the resignation of Mr. C. Brown, and beg to express to him their appreciation of the services that he has rendered to the Association during the time that he has been their expert.'

A sub-committee, consisting of the Chairman, Mr. Kingsmill, Mr. C. H. Haynes, and Mr. A. H. Martin, was appointed to take into consideration the election of an expert to the Association, and Mr. E. Davenport, of Stourport, late expert to the Hants and Isle of Wight Bee-keepers' Association was unanimously chosen and will enter upon his duties as soon as the state of the weather will permit.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to Mr. J. HUCKLE, King's Langley, Herts (see 2nd page of Advertisements).

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

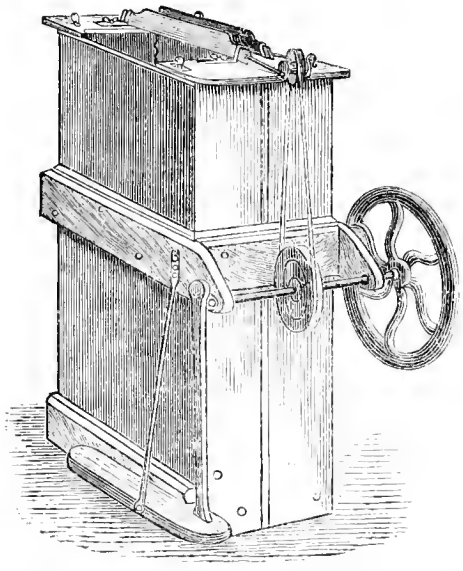
SIMMINS' UNCAPPING MACHINE.

[244.] The first principle of this machine consists in its having two oscillating knives, which, driven by foot power, have a reverse motion, while the comb is passed down between them by the operator, and the cappings are removed from both sides at once, in the quickest manner possible. These drop into the upper can, which has a strainer at bottom, through which the honey drains into the lower vessel, where it can be drawn off by a treacle valve. An invaluable feature in connexion with the knives is that at the recommendation of the manufacturer, Mr. Meadows, of Syston, the edges are serrated, thus making them absolutely perfect for this particular purpose. Between the knives, at either end, are guides arranged to take the end rails of the frame, keeping such in position while passed through by the operator.

The lower and upper cans are readily parted for the purpose of cleaning; and all the parts can be renewed, if necessary. The knives should be returned to the manu-

facturer for sharpening when needed, though this will be seldom, as their peculiar construction enables them to stand a large amount of work.

It is not intended that the machine may be of use for odd combs from the stock chamber. I do without such unnecessary disturbance, but where any



number of colonies are run for extracted honey, the upper combs should all be finished between dividers, and then they may be rapidly passed through the uncapper before going into the extractor; and even where the uncapping knife will still be used, the rapidity of manipulation will amply repay any extra cost in furnishing upper storeys with dividers.—S. SIMMINS, *Rottingdean.*

FOUNDATION FOR SUPERS.

[245.] I am, as Mr. Simmins says might have been expected, quite 'aware of the fact that no comb honey can be obtained unless the state of the atmosphere is such as to cause the secretion of nectar;' but what I meant by the honey glut was the time when beans, clover, limes, wheat, &c., &c., are in full bloom: when honey abounds in every direction, so to speak, and everybody's bees are gathering a surplus—that is what I have always understood to be the general meaning of the term 'honey glut,' or, as it is sometimes called, the honey harvest, and which, as I have previously stated, commences in this district about the middle of June. But before this *principal* honey-glut comes, I very encouragingly hope to get as many sections completed as I am likely to require; and if we are favoured with fine, warm weather during the fruit-blossom season, I am quite sure that with my specially prepared stocks that what Mr. Simmins is pleased to call a 'forlorn hope' will be a realised fact, that is, if my experience as a honey-producer in this district during the last ten years is anything to go by.

In spite of what others as well as myself have written respecting the easily distinguished difference in combs built with *versus* without foundation, Mr. Simmins still persists that all is 'simply imaginary.' Does he mean to say that I have never had any complaints of the hard substance which is found in the centre of every comb that is raised from foundation? that I have never known the honey to be cut away from the hard 'middle bit' by the consumer, or its presence even distinguished? and that I have never taken foundation out of fine-looking combs as perfect as the day it was stuck in the section, but only imagine that such has been the case? If so, I beg to inform him that he is labouring under a very great mistake, and instead of what I have said being 'simply imaginary,' Mr. Simmins only *imagines* that such is the case. I know a great many honey-producers, and honey-consumers too, all of whom agree with me in condemning the use of foundation in supers except one, and he being a maker and a vendor of the article, the position he takes is quite excusable.

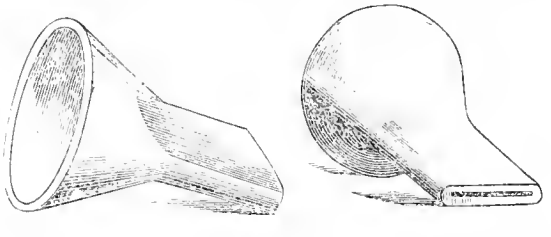
Mr. Simmins says that if sections naturally filled are absolutely pure, so also are those built upon natural wax remoulded by man. Perhaps so; but pure as they may be there still remains the objectionable backbone; and when I call to mind the fact that I have had foundation offered me at *less* than what I make of wax, and that London dentists came to me for beeswax which they say must be absolutely pure, and add that the bulk of that in the market is not pure; and remembering too that it is not so very long ago since a very interesting article appeared in the *British Bee Journal* pointing out that large quantities of so-called beeswax is made of paraffine. There is to my mind a doubt as to whether man is content to simply 'remould' pure wax, even for use in supers; but there, anything does for some people, and Mr. Simmins and his customers are quite welcome to his fine-looking sections, with an undue proportion of 'remoulded' wax, but I, my friends, and my customers prefer the genuine and delicate work of Miss Apis: and when such an article cannot be profitably produced I will devote my whole apiary to the production of run honey.

As regards the incalculable injury which Mr. Simmins still fears will be the result of the remarks I have made, I repeat that the trade that will suffer through honest statements has no sympathy of mine; and in conclusion I do hope that the next time Mr. Simmins points out one's wrongs he will not, with the same stroke of the pen as it were, commit greater sins himself, for surely the reference I made to extracted honey has as much to do with the subject under discussion as the definition of terms, the influence of the atmosphere, &c., has.—A. SHARP, *Huntingdon.*

'SIMPLICITY' SPRING FEEDER.

[246.] There are so many 'Perfection' feeders in the market that, with Mr. A. I. Root's permission, I should like to call this the 'Simplicity,' and for stimulating purposes it seems to me on the road to 'perfection' as well. It is *simply* a piece of lead pipe (I in. bore), widened out at one end with a plumber's 'turnpin,' and narrowed down at the other end by tapping with a mallet until the requisite dimensions are reached, viz.:—length 4 inches, diameter of cap $2\frac{1}{4}$ inches, length of nozzle 2 inches, aperture at bottom $1\frac{5}{8}'' \times \frac{1}{8}''$.

Preparation and use.—*Simply* stuff the nozzle with cotton wool, gently ramming with a thin strip of wood to within $\frac{3}{8}''$ of lower end, so that the bees cannot reach



it with their mandibles. When you can suck the air through without much effort the job is done. Test with water first. If too tightly rammed pass a thick worsted needle between wool and one *end* of nozzle. *Simply* cut a slit in the quilt next to frames and press feeder hard down; cover with the lid of a half-pound coffee tin, or anything that will fit loosely and not push off. A cushion filled with cork-dust settles nicely down round and about

the feeder. Fit your thick worsted needle into an old bradawl handle, or bit of stick, and carry it round with your syrup can when you fill the feeders, just before dusk. If you find any clogged, press down needle, always in same place, and leave the pricker in the last hive, beginning at that hive next feeding time.

Advantages.—1. The food is delivered right into the cluster. 2. The weight (1 lb.) keeps it perfectly secure while adjusting cushion or coverings. 3. Quantity always the same—about a wineglassful. 4. Cost, if made by self, 2*d.* each, by plumber 3½*d.* each. 5. *Simplicity itself.*

For the *principle* of the thing I am indebted to Mr. Simmins, who at one time described a tin feeder with hole in bottom, plugged with a roll of linen. It is possible also that Mr. Locke's idea of the sponge (page 124) is a modification of the same.—W. Hollier, *Dorking.*

NORFOLK AND NORWICH BEE-KEEPERS' ASSOCIATION.

[247.] Although I am not likely to take any active part in Bee Shows for the future in consequence of serious illness, I am a great reader of everything touching on apiculture. Looking over the last report of the Norfolk and Norwich B. K. A., I see a Rule '9' interpolated lately. This is 'A '9,' That whenever the Bee Tent is sent out it shall be entirely under the charge of the expert, no person but the expert shall be allowed to lecture unless by special permission of the Committee, the Hon. Secretary, or the expert.' What does it mean? Is there such a rule in any other Association? Fancy at one of these shows I meet my friend Cheshire, who is accidentally at Norwich; I say, 'Come along, Cheshire; let's go and stir up that solemn affair of the bee-tent. Have you a bacillus with you?' Oh, no! That won't do—you must have *special permission* from the expert (2nd Class), or the Secretary (who is busy selling his hives), or the sixteen Committee men! Fancy our old friends Abbott and Blow and Baldwin turning back and preventing Mr. Raynor, or Mr. Hooker, or Mr. Booker Hill, and a host of others who know much more than second-class experts of both practical and theoretical bee-keeping.

Who are the advisers of the Norfolk and Norwich B. K. A.? At the last show at Norwich, they gave no prizes for hives and appliances, though they paid 4*l.* 5*s.*, for hire of Implement Tent, and 4*l.* 16*s.* 5*d.* for defraying half expense of advertising Norfolk and Norwich Horticultural Society. Examined carefully, their last report is a queer sort of thing.—J. Lawson Sisson.

IMPROVED QUEEN AND DRONE EXCLUDER.

[248.] When we place a zinc-excluder frame in a hive, or use it in the fixed division to be found in front of three or four frames on some hives, does it not occur to us how difficult it must be for the worker-bee to get through? It cannot fly through. It must either alight on the zinc edge, seize it with the legs, poise itself for an instant, and spring off to the comb or section beyond; or, what is more, creep up and turn a sharp right angle; this process to be repeated going and coming on so many thousands of journeys. Mentally imagine these myriads of instants added together, and then see what a great loss of time there must be to the bees, and this, too, in the very midst of their busiest season when 'time is honey' if not money. No wonder they don't like excluder! Then again, how are they to drag forth the dead bees through holes just deep enough for their own bodies only? Fancy pigeon-holes the height of the bird's body when extended, and without alighting-boards on either side, said pigeons being engaged on express carrying work like the bees! The remedy for all this is to glue, or with patent cement fasten, long strips of wood a quarter inch square, the length of the frame, and flush with the line of holes on each side. These will give us an alighting platform over half an inch wide under each hole, which will undoubtedly much facilitate honey storing and gathering. Besides, the bees would not require to touch the objectionable, cold, magnetic zinc.

If makers in future send out excluders as at present, it will be a simple matter to fasten the woods on as I say; this can also be done to those already in use. In default of square wood, headless matches, or even strips of glued cord, may be used. I scarcely need say that this principle is not applicable to excluder-zinc used on the tops of frames.—R. A. H. Grimshaw, *Horsforth, near Leeds.*

[We hope the time will come when makers will send out hives without excluder zinc; we have long considered it a hindrance to the work of the bees, and there is absolutely no necessity for it.—Ed.]

THE SECTION OF THE FUTURE.

[249.] It seems to me that a 'burning question' for bee-keepers will be the introduction of some new pattern of section which shall be more easily glazed, and stronger and more secure when packed, than the American one-piece sections at present in use. To such of us bee-keepers as reside at a distance from honey companies and merchants to whom we can dispose of our surplus stock, the possibility of such an improvement is very important. If we are to compete with foreign honey producers, we ought to be relieved from the painful uncertainty, and disappointments that now attend the carriage of honey. I have had far more than ordinary experience in packing fragile and valuable things, but I find the exercise of my utmost skill will not ensure my honey travelling safely. Last summer I sent thirty-two sections to North Wales in a box packed with great trouble and minute care, and they arrived almost uninjured. The other day I sent six sections in a strong wooden box half the distance and packed with equal care, but three arrived in a 'mash.'

Even if improved, strong sections could not be produced at less cost than 5*s.*, or even 6*s.* a hundred, instead of the 2*s.* 6*d.* per hundred we now give, it would pay us to use them.

It is a good deal of trouble to put glass windows into packing boxes, containing perhaps only six sections. When, moreover, one has to glaze the honey also, and pack with as much care as one uses for old china, and I cannot but think that a stronger section capable of being quickly glazed or faced with thin wood, and which would not give at the corners if jarred, which the present sections do, would be gladly tried by many of us. Of course, they would take more room, but they could be put on two tiers at a time. Will not the appliance-makers give some help in the matter?

When the time comes round, some hints as to the best methods of preparing sections for sale, glazing, &c., would be very welcome; also, how best to bottle the run honey and clear it from all scraps of wax, &c., so that it may look perfect in the glass jars.—Irish Novice.

BEES AND CHOLERA.

[250.] The inclosed appeared as an article in a leading Queensland paper.

The *Dorunda* spoken of was supposed to have cholera on board, and the editor of the paper evidently fears that choleraic germs may have been stored by the bees in their combs. The matter has excited great interest in the Colony; and if the theory is correct that bees convey germs of disease from place to place, it is not to be wondered at that great caution should be exercised. These bees were imported by Messrs. Spry, of Brisbane, whose name and fame as large apiarists are not unknown

to your readers. I shall be happy to let you know how this matter eventuated, and meanwhile, Mr. Editor, I hope some of your readers will give their views on the subject.—T. I., *March 19th.*

'We are informed that among the passengers by the *Dorunda*, and placed in quarantine with them, were a number of bees. Now, it is pretty well known that bees are about as indefatigable in the collection and distribution of germs of all kinds as any known agents. It is, therefore, by no means unlikely that these industrious insects, while foraging about Peel Island, may have managed to convey back to their hives, along with their store of pollen, whatever of these dangerous germs they may have encountered on their way. Besides, though it may not be generally known, bees are great scavengers, and frequently infest sewage, and all kinds of refuse, for the sake of obtaining saline particles, which particles the curious may observe on the comb by means of a microscope. Under these circumstances, it is evidently advisable, in the interests of the public health, that the hives and combs should be destroyed. With regard to the bees themselves, it seems a pity to adopt such a summary measure, when the trouble and expense that have been bestowed upon them are taken into consideration; but if the queens are saved, that will probably satisfy the owner.'

[Our views as to the effect of bacteria may be gathered from our reply to A. Rendell, p. 158.—Ed.]

REV. F. G. JENYNS' WORK ON BEE-KEEPING.

[251.] I am under the impression that the work on bees, recently published by the Rev. F. G. Jenyns, was intended for use in rural elementary schools. Perhaps I am wrong. But I should like, with your kind permission, to point out that the price forbids its introduction into such schools, where it might be used as a supplementary reader, and which are attended by the children of the very class who need to have their attention directed to the advantages of the modern system of bee-keeping. Could not the author see his way to publish a cheaper edition? Surely some enterprising educational publisher would publish it for *1s. 6d.*, in a binding suitable for school wear. As a rule, the managers of country schools are obliged to draw the purse-strings tight. I should think that many of our bee-keeping schoolmasters would adopt it as a reader if the price were moderate.—Pedagogue.

HAS THE BEE-STING EVER BEEN AN OVIPOSITOR?

[252.] I append a quotation from 'Langstroth on the Honey Bee,' which seems to bear on this subject, page 39. 'Considerable doubt seemed to rest on the accuracy of Dzierzon's statements on this subject'—(that queens do not need impregnation to lay the eggs of males)—'chiefly because of his having hazarded the unfortunate conjecture that the place of the poison-bag in the worker is occupied in the queen by the spermatheca. Now this is completely contrary to fact.'—W. G. Campbell.

THINGS IN GENERAL. [168.]

[253.] I think if our friend who is in trouble about 1-lb. sections will procure the one that holds nearest one pound of comb honey, that will be the right one; and in my humble opinion there is only one size likely to accomplish it—namely, $4\frac{1}{2} \times 4\frac{1}{4} \times 2$. The next difficulty our friend is in, regarding Standard frames, as the worthy editor has already explained it, I can quite endorse what has been said about manipulating being so much easier accomplished without either broad shoulders or metal ends; I have tried both, and have come to the conclusion that we are better without either. If hives are rightly constructed, and you let your frame-ends rest on tin or zinc runners, there will be little to fear, as you can either have your frames close together or apart without the bees getting out.—Chequers.

Replies to Queries.

**** In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[203.] *Nucleus.*—Is the croaking of bees peculiar to Cornwall and the county of 'Nucleus?' W. B. Webster pronounces that 'bees do not croak.' Well, if he insists that only frogs may be said to do so, let it be; but he may rest assured that bees do on occasions make a noise very like croaking. That my cousin 'A. E.' has never heard it I *am* surprised. I thought he had twigged everything. I most distinctly heard this noise last summer, and my bee-man well remembers my calling his attention to it, and certainly neither of us leant against the hive. He says it was like a bee in a bottle, or what is known in Cornwall as a 'dumbledory in a pop-dock,' but it was a distinct creak, if not croak. May I ask my other cousin of North Cornwall to say how he found out that a drone made the noise and how the drone did it?—South Cornwall.

[217.] *Stinging Gloves.*—If 'Rector' would buy a pair of tan-leather gloves and turn them inside out, so that the smooth side is *outside*, he would not find the bees sting either gloves or hand. I had a pair made of gaiter-leather with smooth side out, and find them better than any others. I have tried all kinds as I have not the strong nerves of the 'Lords of Creation.' I put a long gauntlet on to go up the arm.—Lady Bee-keeper.

[233.] *Honey Beverages.* (East Cumberland.)—There are a few summer beverages made with honey; among the chief being Blatch's Honey Lemonade, Beckett's Honey Fruit Syrups. The recipes for making same are the property of the manufacturers. Any ordinary summer drink in which sugar is used is greatly improved if in place of the sugar, honey is substituted. The Rev. V. H. Moyle, Vicar of Ashampstead, Berks, was the pioneer in the advances made towards utilising honey in the manufacture of food and drinks; he would, I know, give you every information as to the means of procuring same. Mead is honey brought to a certain gravity by the addition of water, then boiled and fermented. It is justly celebrated for its peculiar effects on the brain of the human subject, a diagnosis of such could be summed up in two words,—unsteady gait. —W. B. Webster.

[234.] *Paint for Hives.*—Molesworth's *Engineering Formulæ* gives the following among 'Workshop Recipes:'—*Painting.*—A gallon of mixture, or 6 pints of linseed-oil, 1 pint of boiled oil, 1 pint of turpentine, requires from 12 to 14 lbs. of dry paint. These proportions vary according to circumstances. A gallon will cover from 450 to 630 feet on wood. Proportion of colours for ordinary paints:—

Colours.	Ingredients by Weight.						
	White Lead.	Lamp-black.	Red Lead.	Red Ochre.	Verdi-gris.	Burnt Umber.	Spanish Brown.
White.....	100						
Black		100					
Green.....	25				75		
Stone	99					1	
Lead	98	2					
Red.....			50	50			
Chocolate ...		4					96

Priming.—White lead (sometimes mixed with chalk) diluted with linseed-oil.

Knotting.—Red lead and size.

Putty.—Spanish whiting and linseed-oil well beaten and kneaded into a stiff paste.—A. T. Wilmot.

[236.] *Lonely Queen.* (Old Drone.)—The hive in which the queen was found had probably been robbed; her subjects uniting with the marauders, and, having emptied the combs, deserted *en bloc.* See *Langstroth on the Honey Bee*, chapter on Robbing, page 263, and note.—Hornefield.

[236.] *Lonely Queen.* (Old Drone.)—This is a very unusual occurrence, and no doubt arose from the colony vacating the hive on account of the shortness of stores. This is frequently done by starving bees at this season of the year,

when they endeavour to enter other hives; the mother bee usually goes with them, and is killed. Perhaps in your case, finding a not very welcome reception, she flew back to her old residence.—W. B. Webster.

[236.] I remember some years ago I was called in to look at some bees and found one stock with all the bees dead and gone except the queen, and she was running in and out of hive on floor-board and about the combs in all directions, and she was as fine healthy queen to look at as I ever saw; it was about this time of year. In those days we had no use for her. We should not treat her so now.—H. Tuck.

[237.] *Placing Crates.* (F. J.)—Place the crate on the bars without quilt, excluder zinc, or anything between them; there is not the slightest necessity for anything to be placed between crate and frames. Of course your crate has spacing rails.—W. B. Webster.

[238.] *Bacon Boxes.* (W. F. A.)—Purchase new well-seasoned wood; you cannot get all the salt out, and this will cause dampness in wet weather. Such boxes at the best are but sorry rubbish to waste your time on in converting them into hives.—W. B. Webster.

Another correspondent suggests submerging the boxes for a week in a running stream.

[239.] *'Wobbling' Circular Saw.* (W. F. A.)—By means of two washers (one on each side of saw) having their inner faces made diagonally, according to the angle required, to the spindle.—W. B. Webster.

[240.] *Perforated Zinc Separators.* (A. B. Johnson.)—The sight of each other, which must be very doubtful in a perfectly dark hive, will not stimulate the bees to greater exertions. The advantages claimed are, the bees can walk on this zinc with greater ease than on plain, and so do not traverse the face of the sections and so soil them; they also allow a freer circulation of the warm air through the rack. I should not go to the expense of them myself.—W. B. Webster.

[241.] *Second Entrance.* (A. B. Johnson.)—I much prefer only one entrance. Hives are used with two as you describe, the advantage gained by such I have failed to see, and few others have done differently. I consider them a detriment.—W. B. Webster.

[241.] *Second Entrance.*—I have found a second entrance very useful in working the large glass super or the straw skep as was used years ago. The bees would all enter at bottom for first few days and super workers leave at top. In a few days they would enter and leave at top and bottom entrance.—H. Tuck.

[242.] *Starter in Bell-glass Super.* (A. B. J.)—The best way is to have a small pedestal 4 inches square at bottom and round at top to fit the hole in glass. If it is a 2-inch hole I use a piece of perforated zinc and fasten it to the pedestal with a tin tack; cut a grove in each square and fasten a piece of super foundation comb in each, about an inch wide and two or three deep. It will not disfigure the glass if you want it for a show glass.—H. Tuck.

[242.] *'Starter' in Bell Glass.* (A. B. J.)—Immerse the outside of bell glass in hot water (not too hot), and place starter cut out to shape of glass, then dip it into cold water to fix it. It is a rather 'ticklish' operation.—W. B. W.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[254.] *Carniolan Hybrids.*—What is the opinion as to the working capabilities of Carniolan hybrids (black)? Are they as vindictive as Ligurians crossed with the blacks are said to be?—M. J. A.

[255.]—*Dry-sugar Feeders.*—Is the dry-sugar feeder a less troublesome mode of supplying food to bees than the old syrup feeders?—G. S. F., *Epsom.*

[256.]—*Two Queens in one Hive.*—Would it be possible, by dividing a long hive into two or three divisions by means of excluder zinc or frames of sections, to obtain two or three laying queens in the same hive?—Trevor Saynor.

[257.]—Would it not be a good plan to fasten a sheet of foundation to a division-board with a half-inch rim all round at the edges of the division board, so that the bees could draw out half a comb on it? This, when filled with sealed honey, would keep the bees far warmer and more comfortable in winter, and would economise space at all seasons.—F. L.

[258.] *Drone Foundation in Sections.*—Is it a fact that in any comb bees require less time and material to work out and seal over drone than worker cells? If so, would it not be an advantage if drone foundation were used in all sections? Of course if there be little or no drone comb in body of hive the queen may ascend and deposit drone eggs above, but this may be prevented by using queen-excluder over frames.—A. B. Johnston.

[259.] About what weight of comb would be in a well-filled and finished one-pound section?—A. B. Johnston.

[260.] *Artificial Queen.*—Is an artificial queen likely to turn out as productive as a natural one?—A. B. Johnston.

[261.] *Honey Receptacle.*—Can some one inform me if I can safely use an empty brandy or sherry cask for maturing honey; so cleanse it as to not in the least damage honey? or will it be wisest and cheapest in the long run to purchase a tin or tinned iron one?—East Cumberland.

[262.] *Painting Hives, &c.*—I have twelve bar-frame hives which want cleaning inside, cleaning and painting outside. I propose to do them in the following manner:—To get four make-shift hives and stand them in the place of four originals, transfer the combs from one to the other, take away the hives, clean and paint, and, say in two or three days, restore them to their former position, and so on with the rest. Do you agree with the plan? Would there be any danger of losing queens? (2) If I find any hive without brood or eggs may I conclude it is queenless?—W. G.

[263.] *Syrup and Honey.*—How can we keep syrup from being stored with honey? For instance, I extracted all honey in the autumn, and fed up with syrup. Now, will the syrup be appropriated by the bees before the honey-flow comes? If not, how can we extract with safety the combs thus used.—Br. W.

[264.] *How to Dislodge Bees from a House.*—A gentleman earnestly desires good advice on this subject. Wishing to make alteration in his house, he has had some weather-tilings removed, about ten feet from the ground, and over the bow-window of a sitting-room. Now that the warm weather has set in, the bees seem to be in full activity, and the work of building cannot be safely undertaken until they are dislodged. For several years past, bees had been noticed to affect the house, but until they took possession of this spot last autumn their presence had never in any way been inconvenient. If any reader of this will kindly correspond with the Rev. — Crofts, Mountfield Vicarage, Robertsbridge, he will be most grateful.

Echoes from the Hives.

North Leicestershire, April 5th.—Since I last wrote (22nd ult.) a change to wet and windy weather has kept the bees pretty well at home. During the fine week preceding the bad weather, the bees were constantly on the wing, but did very little else but attempt robbing. Forage was, and still is, very scarce.

Bee Vagaries. Early Swarms.—On the 24th a strong stock of hybrids swarmed out and clustered on a stone wall. After remaining quiet a few minutes, the bees began to run into the crevices, as though searching for the queen. In a short time this activity ceased, and the bees commenced returning to the hive, a few at a time. On examination in the evening, the bees covered eight bars, stores were plentiful, and there were eggs and brood in all stages. Another stock (a skep) bunched out for a time, and then took to wing. After a time the bees returned, and for half an hour were running very wildly about the exterior of the hive, when all of a sudden every bee disappeared within the hive. As I had a week before given this stock

a good supply of coarse honey, it could not be an attempt to make a starvation swarm. Dr. Emmerson reports that he saw a young queen disporting herself in front of hive No. 2, *vide* 'Echo' for March 18th.—E. B.

Keswick, April 3rd.—Since the frost and snow disappeared we have not been favoured with much suitable bee weather in this district. During the past few days it has never ceased from raining. Snow has fallen several times during the week, and it still continues very cold.—R. P.

Evesham, April 5th.—I write from the centre of a district which is known as the 'Garden of England,' in the fertile Vale of Evesham. We have passed through the longest and most trying winter that has been experienced for many years. The first snow fell on September 26th, 1885, and we had a snowstorm here on the last day of March. The bees went early into their winter quarters, and for as long as six weeks at a time were unable to get even a 'health flight.' Seven of my stocks have survived out of eight. One died through dysentery, which is extremely prevalent in this neighbourhood, and I hear of many of our members having lost three and four stocks from this cause. All my bees are now in a healthy state. I have cleaned floor-boards thoroughly, and swept out all dead bees; they are breeding fast, pollen carrying from the crocuses, and busy on the apricot blossom, which is coming out the last few days. We are quite a month later in every way than we were this time last year, but there is every promise of a most abundant bloom on all the fruit-trees in the market-gardens, which surround the town for a radius of three miles.—A. H. Martin, *Hon. Sec. Worcestershire B. K. A., Evesham.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this Column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Edward J. Gibbins.—*Depth of the Cowan Hives.*—The dimensions given in the *Guide Book* are quite correct. The total depth of our hive is 8⅞ inches. The rabbets are cut out similar to the illustration shown on page 26 of *Guide Book*. The top bar, ⅞ of an inch thick, then comes level with the top of the hive, the depth of the frame being 8½ inches, leaves a space of ⅜ of an inch under the frames. The frames do not hang on the top of the hive, but level with the top in the rabbets prepared for them, and the depth of 8⅞ must not be reckoned from the under side of top bar but from the top of it.

A. Rendell.—1. *Dysentery.*—We have examined the brown spots you have scraped off the front of your hive and alighting board, and find they consist principally of digested pollen, with a good many pollen-grains, entire and undigested. This is different to the thinner watery fluid ejected by the bees earlier in the season. We have for some time been making observations with regard to dysentery, which we hope shortly to be able to communicate, all we can at present say is, that it seems to be a fermentation produced by a micro-fungus belonging to the family *Saccharomyces*, a fungus similar to that known as the yeast fungus, and capable, under certain favourable conditions, of decomposing the saccharine matter of the fluid consumed into carbonic acid and alcohol. Want of proper ventilation, if it does not produce the disease, at any rate aggravates it. 2. No, we do not know what experiments Mr. Cheshire is carrying on, or when he will be prepared to say anything about a remedy. 3. Nothing can be simpler than the remedy we employ. Provide clean warm hives, exchange soiled combs for clean ones, feed with candy or good warm syrup, or give a frame of sealed stores. The combs can be syringed, and when dry used again, and are just as good for breeding in as any others. You need not be alarmed about the number of different sorts of *bacilli* found in bees. We have ourselves found five or six apparently different species, but there is no more danger to be apprehended for all that. The air is full of *bacteria*, and at every breath we are inhaling thousands, and our bodies are full of them, but we are none the worse for it. So it is with bees, they may also contain *bacilli* in numbers, and be in no way affected by them. 4. We do not consider dysentery a dangerous disease, nor is it infectious like foul-brood.

W. G. S.—If your search for the queen resulted in discovering that the hive was queenless it is possible that the bees, discovering her inability to fulfil her duties as mother-bee, have dethroned her in their own summary fashion.

W. Mitchell.—Please consult previous numbers as to the best mode of trapping blue-tits and other enemies of bees.

Beeswing.—The bees forwarded were hybrids.

A. R.—1. *Fixing Foundation.*—Put two screws or nails through the top bar after inserting the foundation, so as to pinch in the cleft. 2. Uncap the cells and also feed with thin syrup.—The honey as evaporated for storage must be thinned before it is suitable for food for brood. Hence the necessity for water, which may be conveniently supplied in the form of thin syrup. 3. *Exposure of Brood.*—The less time you expose brood the better, especially in a wind. Five minutes should not injure it, unless the weather is totally unsuitable for opening a hive at all.

T. B.—*Time to Stock a Nucleus.*—When you have ripe queen-cells with which to furnish it.

Novice.—1. *Number of folds of Flannel for a Quilt.*—Four or five. 2. *Uniting.*—If you know one of the queens to be young, or otherwise desirable to preserve, destroy the others. If you have no preference let them fight it out. 3. *Keeping Syrup.*—If properly made it may be kept indefinitely in a dry place. 4. You may buy feeders to regulate supply at any dealers, or you may take the lid of a round tin box and punch one or two holes with the point of a French nail, place it over the mouth of a pickle bottle filled with syrup, invert the whole and place over the feed-hole; this is the simplest and cheapest feeder and one which we constantly use. Cover the bottle bee-tight to prevent robbing.

J. W. B.—*Combs from Hive infected with Foul Brood.*—Do not on any account give them to other stocks. You may extract the honey, thin it out, add Mr. Cheshire's cure to it, and use it for feeding the infected stock; or if you do not extract, you may uncap the cells and give the combs to the infected stock, feeding at same time thin medicated food.

Horace.—1. *Removal of Quilts.*—The winter quilts may be gradually reduced as the weather gets warmer. 2. *Time for Supers.*—When the honey begins to flow freely, and when the hive is full of bees.

Lady Bee-Keeper.—*Moving Bees in Skeps.*—The skep should be carried bottom upwards, with a piece of cheese-cloth tied over to allow of sufficient ventilation and to confine the bees. To make the combs secure, two or three wooden skewers should be pushed into the sides of the hive through combs to the other side a day or two before moving. It is desirable that, if the skep is to travel by rail, it should have old and tough combs.

J. Ford.—There is every probability that the bees have superseded and ejected their queen.

J. W. Pattison.—*Space around Frames.*—The space between the frames and the sides of the hive should be one-fourth of an inch; the passages under the frames, three-eighths.

Spy.—*Separators.*—The most suitable width for separators for 4¼ × 1¼ × 2 sections is 3⅜ inches.

Col.—*Stimulating.*—In the circumstances mentioned we should recommend you to build up your stocks by stimulating them. You would be able to graduate your stimulating better by syrup bottles than by dry-sugar feeders.—We prefer No. 2 sample of American cloth.

Benj.—1. The bees forwarded are hybrids distinguished by a good portion of Ligurian strain.—2. The great requirement of a candidate for a third-class certificate is that he should be able to prove to the judges that he has a fair acquaintance with bee-keeping, but it is not necessary that he should give any evidence, either orally or in writing, of this.

Arthur T. Platt.—*Drones.*—1. The appearance of drones

at this time of the year indicates the presence of a fertile worker, or of an unfertilised or drone-breeding queen. 2. *Third Class Certificate.* — Inability to capture the queen is not an absolute disqualification to a candidate for a third-class certificate. The judges would, of course, take note of this, but they look to a candidate showing a general acquaintance with bee-keeping.

**** Several other queries are postponed to next issue, or replies will be forwarded to the correspondents.*

We have received from Mr. J. Howard, of Holme, Peterborough, and Mr. W. P. Meadows, their joint catalogue (64 pp.). This contains a very extensive list of all the supplies required by bee-keepers. We note in it various specialities, such as the Guinea extractor, the Raynor extractor, Mr. Simmins' dry-sugar feeders, uncapping machine, Raitt's honey-press, honey-ripener, &c. Received, the price-list of Messrs. Aspinwall and Treadwell, of Barrytown-on-Hudson, New York.

We have received a letter from Mr. John McNally, in which he states that his brother, Mr. William McNally, was the first to commence bee-keeping in the family, and is the inventor of honey designs, &c., which he exhibited in the season 1882. We shall be pleased to receive from Mr. W. McNally some description of these designs.

A Kentish Bee-keeper would be obliged if 'J. T. D.' (vol. 13, p. 322) would state the cost per ounce of thymol and menthol; also the quantity of menthol required in syrup for uniting purposes, and whether he should use methylated spirits or wine, or whether it should be alcohol in the formula given.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms; Three Insertions and under, Two Shillings and Sixpence: additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

Business Directory.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

Somerset Agricultural Association Meeting

At WELLS, May 11th, 12th, and 13th, 1886.

THE SOMERSET BEE-KEEPERS' ASSOCIATION will give PRIZES for HIVES, SECTION-CRATES, SKEP COVERS, &c., at the above Show. For Entry Forms and full particulars apply to the Rev. Charles G. Anderson, Otterhampton Rectory, Bridgwater.

By the kind permission of the Council of the Somerset Agricultural Association, the BEE TENT of the S. B. K. A. will be on the Ground. LECTURES and MANIPULATIONS will be given each day.

CHARLES G. ANDERSON, *Hon. Sec.* (135)

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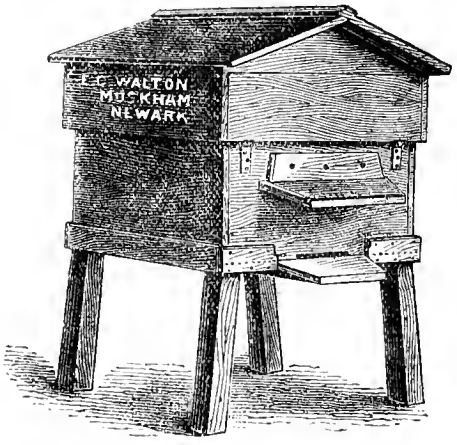

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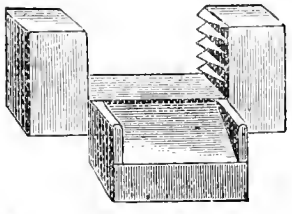

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

EXHIBITION AT SOUTH KENSINGTON.

His Royal Highness the Prince of Wales, President of the Indian and Colonial Exhibition, has been pleased to grant the use of the Conservatory adjoining the Albert Hall, at South Kensington, for the purpose of holding a National Exhibition of Bee-keeping Appliances and Products. Arrangements have been made for the Exhibition to open on Friday, July 30th, and close on Thursday evening, August 5th. An appeal is now made for donations and subscriptions to the Guarantee Fund in order that the Exhibition may be made thoroughly representative of the British Bee-keeping Industry. The under-mentioned amounts have already been announced.—J. HUCKLE, *Sec.*, *April 12th.*

	£	s.	d.
The Baroness Burdett Coutts	25	0	0
D. Stewart	5	5	0
T. W. Cowan..	5	0	0
Capt. Campbell	5	0	0
Rev. E. Clay ..	5	0	0
Mrs. H. R. Peel	5	0	0
J. Bowly.....	3	3	0
J. Eastty.....	3	3	0
H. Jonas.....	3	3	0
J. Linton.....	3	3	0
Rev. F. S. Selater	3	3	0
Rev. J. L. Seager	3	3	0
Dr. Bartrum ..	3	0	0
R. J. Hinton ..	3	0	0
Rev. F. G. Jenyns	3	0	0
Capt. Bush	2	2	0
Hon. and Rev. H. Bligh	1	1	0
T. B. Blow	1	1	0
S. J. Baldwin ..	1	1	0
E. Durrant	1	1	0
J. Garratt	1	1	0
W. O'B. Glennie	1	1	0
G. Henderson..	1	1	0
F. Kenworthy .	1	1	0
A. W. Robinson	1	1	0
G. Walker	1	1	0
F. Zehetmayr ..	1	1	0

EXAMINATIONS.

The annual first-class examination will be held at South Kensington on Saturday, May 15th, commencing at 10 a.m. First and second-class certificates will be awarded at this examination. Candidates already having gained a third-class certificate are entitled to compete at this examination. Candidates intending to compete must give notice to the Secretary, J. Huckle, Kings Langley, Herts, not later than Wednesday, May 5th. Such notice must be accompanied by an entrance fee of five shillings.

MODEL APIARIES.

Though we agree to a great extent with the views expressed by a correspondent in a former number of the *Journal* with respect to the formation of model apiaries, we do not think that if established they would fill the place of the bee tent at flower and other shows. It often unfortunately happens that the expenses of the bee tent are not covered by the receipts, and some are too apt to lose sight of the ultimate benefit to the cause of bee-keeping when the immediate deficiency is so painfully visible. Again, a large number of people present at shows know little or nothing of advanced bee-keeping; and being attracted to the bee tent, the seed, though sown on the waters, is certain sooner or later to bring forth fruit, and we could point out many an enthusiastic bee-keeper who caught the infection after seeing the dexterous manipulations of our experts.

We confess we do not see how model apiaries could be established. Those bee-keepers who make it a business recognise that it is of advantage to their trade to show visitors over their apiaries and explain any details that are required with respect to the management of an apiary. It acts as an advertisement, and that is now the sort of business, and by the sale of bee appliances and the subsequent custom they are repaid for the trouble they take. Sometimes, of course, a hive-maker may have to waste some hours, when time is invaluable to him, and the visitor departs after having made some insignificant purchase. But on the whole, taking one with another, visitors are always welcome, and though sometimes a whale has to be thrown to catch a sprat, as a rule the reverse more often holds good.

Those of us who are amateurs, only selling honey and occasionally bees, know by the bitter experience that the young bee-keeper is very exacting, and too often irrational. He seems to labour under the hallucination that your whole duty is to help him in season and out of season. We have again and again received letters from our correspondents stating the time which would be most suitable to *them* for us to come and visit their apiaries, and they seem to take it as a personal affront if we plead press of work, bee or otherwise. Some years ago we received an urgent note when in church requesting us to come at once; it was to take a swarm, which was beyond the power of our young bee friend.

In practice there are hundreds of model apiaries scattered all over the country. Those of us who take any interest in bee-keeping, and more especially in educating others, are only too pleased to show our apiaries and explain any knotty points, and in all well-managed County Associations there are experts who will visit apiaries for a small fee. The B. B. K. A., by their fostering care of the County Associations, has striven, and

that successfully, to cover England and Wales with a net-work of such model apiaries by helping any new associations, and providing them with lecturers, pamphlets, &c. The freemasonry of bee-keeping is such that one bee-keeper is always ready to help another, and we shall always be only too willing to help by giving introductions to well-known and skilful bee-keepers in the neighbourhood where our correspondents live.

WHAT NEXT?

In our article a few weeks since on the 'Present and Future Prospects of Apiculture,' we pointed out how necessary it was to educate the public to the benefit of honey, and what a useful article of food it would be found. When a genuine article is brought forward it generally takes some time to be appreciated; but anything doubtful that is puffed up, people are somehow attracted to it; a pamphlet setting forth in glowing terms the management of some mythical bee farm, either in California or Central Africa, goes down, and the public are thus tempted to purchase the apparent delicious nectar, ignorant that the contents of the pretty bottle was simply *pure glucose*. Well do we remember, when in Cornwall a few years since, we saw some of our Cornish 'cousins' partaking of some of this compound, and when enlightened as to its source replied, 'Well if it does not do us much harm it is far cheaper than pure honey.'

This state of affairs is passing away. We have honey companies and honey depôts, and are prepared to compete with the Yankees on open ground, provided they send nothing but pure honey. They are, however, not trying in their own land to find channels for their honey; but now have actually come over and started a company on our shores, and in our very midst, under the title, 'The Honey Company.' The following is a copy of an advertisement which has appeared in a local paper:—

'Read this! Special news for this issue. Waterbury watches given away! Delicious Californian honey direct from the Apiaries of the finest districts of California. We take this means of offering direct to the consumer this delightful article in tins of about 60lbs., securely packed and carriage paid to any address, at 30*s.* per tin, or only 6*d.* per lb. More nourishing than butter, this delicate luxury is now offered at half the price of butterine. Parents, heads of households and institutions, make an immediate trial of this delicious honey. Note.—As an inducement we offer to every purchaser, for a short time only, a present gratis of a splendid Waterbury watch, value 10*s.* 6*d.*, safely packed by post.'

Now we have always known that any article that was sold by the attraction of a present of any description, could not be very good. Do we not constantly see tea advertised, and a present given away with a certain quantity? and if we are wise we would never touch such. Honey that is pure and good cannot require the temptation of a watch, a clock, or even 'three acres and a cow.' 'Wine that is good requires no bush,' and equally does the proverb apply to honey.

USEFUL HINTS.

Scarcely a day fit for the examination of hives has occurred since our last Hints. Thus far April has proved a cold and boisterous March. As we write a Report from Scotland comes to hand that—'On Tuesday night (6th inst.) the cold was nearly as intense as it has been all winter. Snow, to the depth of a foot, fell in the Western Highlands, and in Forfar and Perth shires; and showers of sleet and snow are reported up to noon of the 8th.' All over England heavy rains, sleet, and storms,—with intervals of sunshine most dangerous to the bees by enticing them forth never to return,—have prevailed.

There can be no doubt now as to the lateness of the season and the backwardness of the bees—some report a month later than last year. It is too early, however, to despair of a honey-yield and plenty of bees to gather it. The latter becomes a still greater necessity under present circumstances. We cannot, therefore, be too urgent in our advice to 'feed, feed, feed.'

Feeding strong colonies is of more importance than nursing weak ones. Seeing that honey is not to be procured from garden or field, the income is simply a little pollen, and populous colonies lacking food quickly perish. We have known this to happen after supers have been given. Let all apiarists, then, keep a sharp eye on food stores, remembering that any small quantity of syrup, stored in the body of the hive now, will serve as food for larvæ, even while honey, later on, is being conveyed in quantity into the sections above.

We have found Duncan's Pearl Sugar one of the best for syrup, but are sorry to learn that the firm has closed its premises in consequences of the great depression in the sugar trade. We can only hope that better days are coming.

Wasps.—Do not forget the queen-wasps. Bribe village boys to destroy them, and keep a garden syringe handy, with which to shoot them down. Every queen destroyed now will cause one nest less to worry the bees in the autumn.

Water and Meal.—Continue to supply these, as previously directed, until flowers become more plentiful. In olden times it was considered that when gooseberries and currants came into bloom there was no further occasion to feed the bees. That time, with us, has not yet arrived. Indeed, we scarcely remember a season in which, in the middle of April, so little food from natural sources was available for the bees. The careful observant apiarist, who never leaves anything to chance, will reap his reward in the 'good time coming.'

Preventing After-swarms.—There are many who desire a moderate increase of colonies by natural swarming, while working for comb-honey, but object to the worry and annoyance of after-swarms, as well as to the loss caused by such, since neither these swarms, nor the depleted colonies from which they come, can be depended upon for passing safely through the winter, nor can surplus honey in any form be expected from them. To such we recommend a system, based upon Heddon's plan, but differing in varied degrees, which we have successfully practised.

Strong colonies, in ten or twelve framed hives, are brought up to the full amount of population, by the time the honey-flow commences, when sections are placed over them. If work is carried on briskly, a second rack is soon placed beneath the first. Before these are completed, we will suppose the swarming fever to have seized upon the bees, and, one fine day, a large swarm issues, the sections and brood-hive being well-nigh deserted. Let us suppose that our hive faces southward. The first step is to secure the swarm, which is shaken into a zinc pail, and poured down in front of a newly-prepared hive filled with sheets of foundation, which has been placed on the stand of the old stock. When the swarm has entered its new abode, the section racks are removed from the parent stock and placed upon the swarm. The old stock is now set close beside, and on the east side of the swarm, with its entrance facing due east, forming an angle of ninety degrees with the entrance of the swarm. This angle is gradually reduced daily, until on the fourth and fifth day the entrance of the parent stock faces south—the same as the swarm. On the seventh day the old stock is removed to a new stand, at some distance from the swarm, and in five

cases out of six no second swarm will issue, the number of bees being so reduced by desertion of the swarm, that the young queen, as soon as hatched, is allowed to destroy her younger sisters by tearing them from their cells. If, however, a second swarm should issue it will suffice to cut away any queen-cells remaining in the hive and to return the swarm. The following autumn, if desired, the old stock, with its young queen, may be united to the swarm, the surplus honey being removed from both colonies.

By this plan the mass of bees goes to the swarm, enabling it to complete its supers at the same time that the foundation is being drawn out and filled with brood in the hive below. The old stock recuperated with hatching brood, and headed by a young and prolific queen, will again become strong by the autumn, and may be kept as a separate colony if increase is desired. In a good season the swarm will often require one or more additional section racks, and the parent colony may also afford a surplus. Those who practise this plan, with the intention of uniting the two colonies in the autumn, often allow the parent stock to retain its original position beside the swarm, with its entrance at an angle of ninety degrees.

Queen Introduction.—When it is desired to *change* the queen of any colony, let it be remembered that bees never receive kindly a strange queen while they are in possession of queen-cells, or even rudimentary cells. Their first impulse on discovering the loss or removal of their queen, is to raise cells over larvæ or eggs. The safest plan, therefore, is not to attempt to introduce the new queens until the mania for building cells is somewhat subdued—say in three or four days—when every cell, or commencement of a cell, should be clean cut out and a drop of carbolic solution applied to the spot. The new queen should then be placed under a pipe-cover cage between brood and sealed honey, a cell or two of honey being broken in pushing the cage up to the septum (or midrib). After twenty-four hours she may be quietly released, and will generally be received with every mark of pleasure. Our own practice is to change the queens at one and the same operation, but we are careful, before liberating the new queen, to ascertain that there are no queen-cells in course of construction, or, if there are, to destroy them, and to delay the release until the mania has subsided. In the case of colonies which have been queenless for some time it is not to attempt introduction, but to unite them to other colonies. As a rule, English bees receive a strange queen with far less trouble than any other variety. Hybrids, perhaps, are the worst of all.

Section-racks and Cases should now be either in readiness or at once prepared. We see no objection to sections being filled with foundation if only it be sufficiently light and fine in quality. We have found none equal to the thinnest flat-bottomed American. Sections worked upon full sheets of this are perfectly transparent, have no 'fish-bone,' and we defy any one to distinguish such from those built without foundation at all. Passing a long, fine needle through the section forms a good test as well as transparency. If any impediment to the passage of the needle is felt at the centre of the section, 'fish-bone' is the cause. Our own practice is to insert a triangular piece, about half filling the section-box, and thus primed we find the sections filled as rapidly as when full sheets were used, which was our former plan. Indeed, so small is the amount of wax required for a one-pound section that we are not prepared to assert that these small boxes would not be as rapidly completed without foundation as with it during the best part of the honey season. Two-pound sections we rarely use, finding them as unsaleable as extracted honey. For fixing foundation in section-boxes, we still continue to use 'Parker's Foundation-fixer,' which is an admirable implement, does its work rapidly and well, occupies small space, and its price is low, viz., 1*s*. Messrs. Neighbour, and no doubt other purveyors, keep abundance of these machines, of American manufacture, in stock. It is fully described, with engraving, on page 64 of Mr. Cowan's *Bee-keeper's Guide*.

Manipulation.—During the present inclement weather no examination of hives should be permitted. Scarcely anything can be more injurious to colonies than to uncover and separate the brood-nest in such weather as we are now experiencing. The heat thus lost is not recovered for days, to the great injury of the brood especially and of the entire colony generally.

Things-in-General.—*'Piping' of Queens.*—For the prevention of after-swarms, where natural swarming is practised, we have often heard it recommended to listen at night from the seventh to the tenth day after the issue of the first swarm for the piping of the queen. Now, that this piping invariably or generally takes place, we beg leave to doubt. Although we have occasionally heard it, yet in our experience it has been the exception and not the rule. On one day last season it was our good (or bad?) fortune to have twenty-three first swarms. What a task, from the seventh to the tenth day afterwards to have spent all our evenings for the purpose of listening at the parent hive for the 'piping' of the young queen, and, when heard, of manipulating their combs one by one and cutting out the queen-cell. *Pace* our friends of the 'piping system,' we prefer by far the plan recommended above.

Raising Young Queens.—The question—'How shall we keep up in a small apiary of, say, three or four hives, a succession of young queens to supersede the old ones, with the least possible loss of time and honey?'—is often asked. We answer, (1) Follow the above plan of preventing after-swarms, taking the extra precaution of placing a super upon the hives containing your best queens after preparation for swarming has begun, or do not super at all until after the swarm has issued. (2.) Instead of placing the parent hive beside the swarm, return the latter, having first removed its queen. By either of these plans young queens from the best mothers may be obtained—from populous colonies in the natural way—and with the minimum of loss in the storage of honey. Under any ordinary system the mating with drones is a matter of chance.

Reversible Hive.—In a criticism of the 'Heddon Hive,' noticed in last 'Hints,' Mr. Alves asks the inventor to answer the following questions:—'1. Have you any trouble in making and keeping the frames of the precise width? 2. Have you not been troubled with expansion and contraction? 3. Has not the accumulation of propolis given you trouble at the tops of the frames where they touch, or nearly touch, the front and rear of the case, and also at the joints made by the frame, on the thumb-screw's side, with the front and rear of the case?—It is to be understood that an impediment longitudinally of only $\frac{1}{16}$ of an inch will prevent the replacing of a frame, and that an expansion of or an accretion to each frame of $\frac{1}{32}$ of an inch, will take up all of his spare room.' We shall be rather curious to see Mr. Heddon's answers to the above questions. Further, we are told that this new hive was ushered into bee literature with such a flourish of trumpets, and at the same time Mr. Heddon had so wonderfully crossed his old records, that some of us could not but laugh for the fun of the thing. Mr. Jones, the noted Canadian bee-keeper, being appointed agent for the hive in Canada, will, we trust, send a specimen to our Colonial Exhibition at South Kensington.

JOTTINGS BY AMATEUR EXPERT.

Mel sapit omnia.

Croaking.—So bees do really croak—Cornish bees at least. 'Like bees like masters.' I have never twigged them at it 'up a-long.' If 'South Cornwall' is surprised,

'A. E.' is not; perhaps, after all, it was only the *pikies* they heard 'down long we,' especially as the sound emitted was like a 'dumbledory.' I await 'Manager's' reply with bated breath.

Experts and Bee-tents.—So Time has laid its relentless hand on our old friend 'the Sir Wilfrid Lawson of bee-keepers.' How we shall miss him at the coming Colonial!' I hope he can still watch his bees at home, as I feel assured time will then not lay dull on his hands. Wonder if his old hen has hatched out that pumpkin yet? But he is having a fling at Rule 9. Well, now, I am not going to defend the N. and N. B. K. A., but I do agree with Rule 9. Not because, if I was in charge of a bee-tent, I should ever use it to keep out any of the 'fathers of bee-keeping' he enumerates, or Mr. Sisson either. Keep him out? I should think not! His jokes are more interesting to many than the bees, without the bacillus thrown in. But it will keep out a host of people who are a positive nuisance to the expert, who will throng the internal arena to show how courageous they are, but who dare not show into their own gardens the day after 'their man' has taken the last honey for the season. They crowd the expert so that he has not elbow room; they block the sight from the audience, give erroneous answers, chatter amongst themselves; and if poor 'second-class' happens to be a little nervous under the eyes of so many 'lights' and does not happen to find the queen to a moment, will get her pointed out by one of these gentlemen with a huge walking-stick, and when poor flurried 'second-class' says he cannot see her majesty will get for answer, 'She has joined the cluster again now, but I am sure she was there.' How nice for such an expert to be able to keep out such gentry by Rule 9, who, like too many 'stickelers' in a wrestling-ring, are neither use nor ornament.

Sections.—'Irish Novice' may strengthen his sections at the corners with glue as he folds them, but he will probably prefer them made stronger; and he is only one of many. I have hitherto escaped a 'mash' with sections, but not with bottles. Corrugated card-board is a good thing for packing, but all adds to the expense. I have just seen a new thing in sections, it is a departure from all I have ever seen before; the 'craft' will have an early opportunity of judging of its merits, so I will say no more at present about it. I also hope Mr. Editor will give us the 'hints' asked for about putting up sections and honey in bottles for market at an early date.

The *Indiana Farmer* is right about 'style of packing having much to do with selling honey.' We shall find our Colonial brothers will 'lick us into fits' at the coming exhibition in 'style of packing' and the art of 'captivating purchasers,' especially if the B. B. K. A.'s new exhibition rules are strictly enforced.

Bacilli. Oh, horrors! how I shuddered when I read what you had to say to A. Rendell. 'The air is full of *bacilli*, and at every breath we are inhaling thousands, and our bodies are full of them, but we are none the worse for it.' Comforting, very! *Bacilli* Cholera! *Bacilli alvei! Bacilli Gaytoni!* (yes, I declare I get more bald daily) *Bacilli* . . . . but it is bed-time—'to sleep, perchance to dream,' *Bacilli!*—Amateur Expert.

Review.

A New Era in Modern Bee-keeping. Simmins's Original Non-swarming System as applied to Hives in Present Use.—This is a pamphlet of nearly sixty pages by Mr. Simmins, of Rottingdean, near Brighton. The author is known as a contributor to our columns, and as a producer of bees and honey, and has one of the largest apiaries in this country. In this pamphlet Mr. Simmins explains how it is possible to get from 60 to 100 pounds of honey per colony, and says the principle consists in giving the bees more room than they require in the shape of *unfinished stock combs adjoining or next to the entrance.* Only starters are used instead of full stocks of comb foundation for brood-frames, and he limits the number of his 'brood-combs just before the season commences or before any drone-cells are capped,' then inserts 'below, or in front of such brood-combs, several frames with ¼-inch starters only.' In this way he says the bees 'having more room than they require in the nursery the desire for swarming does not exist, while, for all practical purposes, the bees can be at once crowded into the sections; the latter all being first filled with newly-built combs.' The use of this he considers will represent a saving of 30 lbs. at least over foundation. Pelham foundation is recommended for drawing out into comb, which is then cut up and put into sections used for surplus. It is not quite clear which way Mr. Simmins places his frames, as the illustration shows them at right angles, whereas the author speaks of filling up in front of brood-combs with frames containing starters, which would imply combs parallel to entrance. The sections are worked in two tiers on the 'back of the hive just over the brood-nest, which should be limited to eight or nine frames by about May 10th.' The space in front is to be filled up (with no division-board intervening) with as many frames with ¼-inch starters as will reach the entrance. Hives holding more than fifteen frames are not recommended. The author says very little comb will be built in the empty frames at front if the bees are kept busy in the sections, and it should not on any account be allowed to be fully worked out. 'As comb appears in them cut it out and fit it into sections quite tight all round; but should any contain eggs, hang such in the comb-rack for a day or two before using, that their vitality may be destroyed, when they will be removed by the bees as the combs are returned in sections. Any with larvæ may remain, if not interfering with work in supers; otherwise give such to nuclei.' Drone-comb can be melted and is considered a clear gain in wax.

Another way is to crowd the bees on eight or nine combs about 10th of May, at the same time placing another box, with starters only, under the first. As the weather becomes favourable put on sections filled with comb, remove as fast as completed, and the lower comb will not be completed all the season. The combs in these should be run down and the frames used the following year. For producing the combs for sections Porto Rico sugar is recommended, and on the third day they are sufficiently drawn out to cut up to fit into the sections. No separators are used. For obtaining extracted honey the hive is divided by wooden separators into eight compartments, and into these eight brood-combs are placed from stock hive, which is filled up with frames having starters only. The divided hive is placed on this, and as the brood is hatched out and honey stored they are removed and the process repeated. If necessary, another set of eight can be placed under the second. Straw hives are recommended to be worked in the same way, always giving the empty space at the bottom.

This in a few words is the system which, in the words of its author, 'has reduced the whole question to the finest limit, and all availing themselves of it will have no difficulty in producing honey profitably at the present low prices, and, if needful, at even lower rates.' Mr. Simmins claims it as his *Original non-swarming system, based upon rational principles and a thorough knowledge of the economy of the bee-hive.* How true the old adage, that *there is nothing new under the sun.* There have been many devices invented to prevent swarming and systems introduced during the last 200 years with this object. John Gedde, in 1675, propounded his system, based on exactly the same principle. Gedde says:—'1. It is natural for all bees to begin at the top, and to work downwards. 2. That bees swarm for want of

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of March, 1886, amounted to 2722*l.* [From a return sent by the Statistical Officer, H.M. Customs to E. H. Bellairs, Wingfield, Christchurch.]

REV. F. G. JENYNS' 'BOOK ABOUT BEES.'

[266.] As a publisher who has had no little experience in publishing books at cheap rates, may I be allowed to say Mr. Jenyns' *Book about Bees* must have somewhat a limited sale 'as a supplementary reader;' but if the author can be assured of a sale of 5000 he need have no hesitation in publishing it at 1*s.* 6*d.*? Will you permit me to add, I once published a rather popular thing in pamphlet form at 2*d.*; another publisher issued it at 1*s.*; I lost by my pamphlet, and the other publisher sold, at the least, four times the quantity that I did, and made a profit? Further, I now have two books, word for word the same, one published at 1*s.* 6*d.*, and the other at 6*d.*; for a particular reason, I make that at 6*d.* superior to that at 1*s.* 6*d.*, and yet the public prefer that at 1*s.* 6*d.* I could give other instances, but your space, I know, is valuable.—A PUBLISHER.

THE REV. F. G. JENYNS' WORK ON BEE-KEEPING.

[267.] In reply to 'Pedagogne' in the last *Bee Journal*, permit me to say that as soon as ever the sale of the present edition of the book is such as to allow of another edition being sent out, it will certainly be issued in a cheap form suitable for schools. I am particularly anxious that this cheap edition should be published as soon as possible. I would only add that although the published price of the present edition is 3*s.* 6*d.*, the book (owing to the prevailing system of 3*d.* in the 1*s.* discount) can always be had from booksellers for 2*s.* 8*d.*—F. G. JENYNS, *Knebworth, April* 12.

BEES CROAKING.

[268.] As this appears to be a sufficiently rare phenomenon to justify some scepticism as to its ever occurring, it may be well for me to add my testimony. Last summer a distinct croaking occurred on several occasions in two different hives, and so truly does croaking describe the noise that I looked carefully under the hives, and all about, for a toad. The time and place were unlikely for a toad to be croaking; but it was only after a good search, and distinctly satisfying myself that the noise came from within the hives—only, in fact, on compulsion—that I concluded the noise to be made by the bees—how, or why, I did not ascertain.—T. A. CHAPMAN, *Hereford.*

CROAKING NOISE. [203.]

[269.] Croaking bees are not peculiar to Cornwall—my county being Staffordshire. When I read W. B. Webster's and 'A. E.'s' reply to my query, I confess I felt somewhat snubbed, and being very much of a novice began to doubt my own senses, until I read 'Manager's' reply. Last summer I heard this noise in a bar-frame hive, off and on for a month or more, and several times opened the hive to ascertain cause, but without success; the noise ceased directly I began to manipulate. I am quite familiar with the piping of queens, but this croaking noise is very different. I distinctly heard it nine or ten yards from the hive. I don't know what a 'dumbledory in a pop-dock' is; but the noise I refer to is a distinct *croak*. I heard similar noise in a hive this spring—a second swarm last year, but in no way related to above-mentioned stock. This hive had a well-developed queen, with both eggs and brood in all stages, early in March. I did not see any drone. The weather has been so bad since, I have had no opportunity of examining again, but when I do, will keep a sharp look out for these *noisy gentlemen*. In meantime I shall be glad to know how 'Manager' 'twigged' a drone croaking.—NUCLEUS.

BEE-KEEPING IN MINORCA.

[270.] You ask me how the natives keep bees. I think our bees keep themselves. Very little care is bestowed upon them by the so-called bee-keepers. Their hives are composed of a long cylinder made of split reeds, with round stone headings an inch thick at either end. These cylinders—about a foot across and five long—are laid on a sloping stone bank, with a few shavings on top as a cushion. Some dozen hives are thus laid close together with front entrances sloping downwards, generally among the prickly pear bushes, where nothing more useful can be made to grow. The front stone heading has nine or ten holes bored through it for the bees to go in and out. Tiles are then laid over the whole to keep off the rain, and their apiary is completed.

Once or twice a-year the so-called bee-keeper, who is generally an ignorant rustic, looks into his hives in order to take out what little honey he may find there. But he often finds bee-moths and caterpillars where he hoped to find honey. In our warm climate the moth makes sad havoc among these ill-cared hives. On such occasions our bee-keeper concludes his bees have made the sad mistake of laying moth-worm eggs instead of bee-brood. He considers this the only possible way of accounting for such ruin as he finds within his hives. Occasionally he comes across a little of our excellent Minorca honey, and this is the way he goes to work to get it out.

About the middle or end of June he takes with him an iron instrument, some two feet long, having a flat, sharp-cutting edge at one end and a hook at the other, and after smoking heavily he goes to work cutting away and pulling out the combs—brood and all—which so irritates the poor bees that occasionally he has to flee for his life. The hives being set close together—touching each other in fact—your readers can easily imagine the confusion that ensues. Sometimes the bees take to robbing; but the fellow has no idea of the cause of his difficulties, thinking they get up a fight from 'pure cussedness'—and yet our young bees are as gentle as flies. I asked the man who sold me my two swarms how much honey he gathered from them all. He answered that sometimes he got a little, and sometimes none at all. One or two *arrobas*, or at most a hundredweight, is considered good luck, even when you are the unhappy owner of forty of these hives, as was the case with my man. This would be at most 2½ pounds per hive. And yet these ignoramuses innocently laugh at us, good-naturedly, for keeping our bees in such a new-fangled way. *Per contra*, the sulphur-pit is unknown here, a fact which speaks in their favour.

Formerly the nectar was more abundant than at present, many having given up in disgust, as well they may. If we can get the people to use modern methods, we may have great hopes for the future, for, as you must

crate of sections. Excluder zinc interferes but little with the work of the bees when placed close on top of frames and supers, be it glass, wood, or straw, closely fixed upon it, and well covered. The result would be pure honey and plenty, and *free from brood*.—R. R. Godfrey.

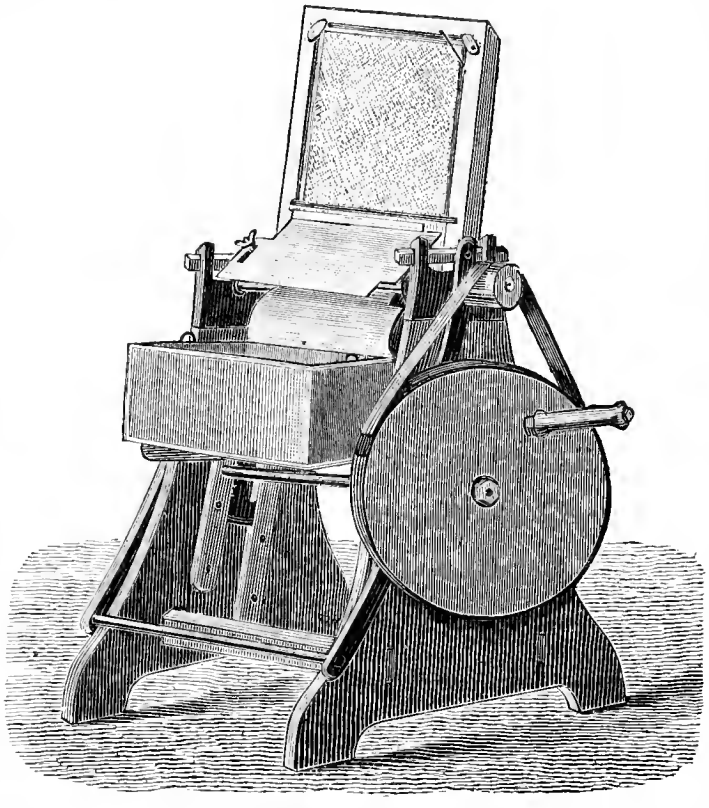
I find no advantage gained by the use of excluder zinc between hive and sections. I have discontinued its use for four years now, and have never yet had brood put into sections. With supers, such as Lee's, Crystal Palace, &c., it is necessary. I am strongly of opinion that it very much interferes with the working of the bees. Since giving up the use of it I have had crates more readily entered, but I have never tested this matter by having two hives working side by side, one with it and one without it.—P. H. Phillips.

In working for section honey it is an advantage to use excluders, unless the stock hive is very large, so that the queen has always plenty of empty cells in which to deposit her eggs. If there is always plenty of empty cells in the stock hive the bees will store in the sections a little more honey without the excluders.—William Carr.

With crates of 1-lb. sections I consider the use of excluder zinc a positive disadvantage. If hives are properly manipulated the queen will rarely enter the super; but I would much rather, if it were a necessary condition, have a spoilt section or two and allow the bees greater freedom. I have seldom had a spoilt 1-lb. section, except in the Anglo-Cyprian hive, about the supering of which I wrote vol. 12, p. 349. I have not, however, been uniformly successful with crates of 2-lb. sections, having frequently one or more spoilt in a crate, and I should therefore favour, where those sections or large supers generally are used, either a queen-excluding adapting-board, or a sheet of excluder zinc with bee-space above and below. The excluder so placed interferes with the passage of the bees to and from the super far less than when it is placed flat upon the frames.—C. N. White.

COUNT ZORZI'S UNCAPPING MACHINE.

During our visit to the Apicultural Exhibition held at Milan amongst other things there were two machines which were brought to our notice and particularly attracted our attention. These were an uncapping machine and a press for making comb foundation. The uncapping machine, the first of the kind we believe ever made, is the invention of Count R. Zorzi, of Bologna, who deservedly received a gold medal for it at the Exhibition.

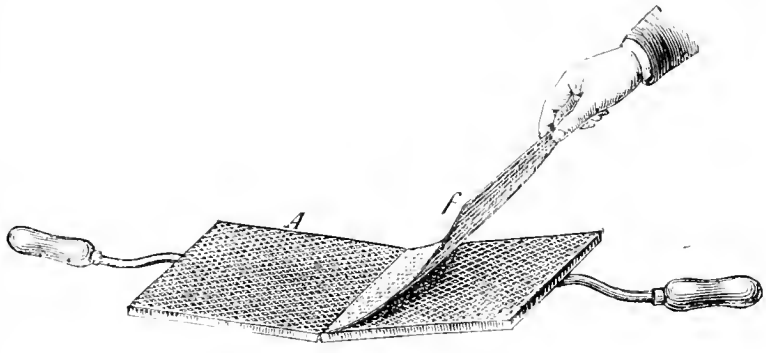


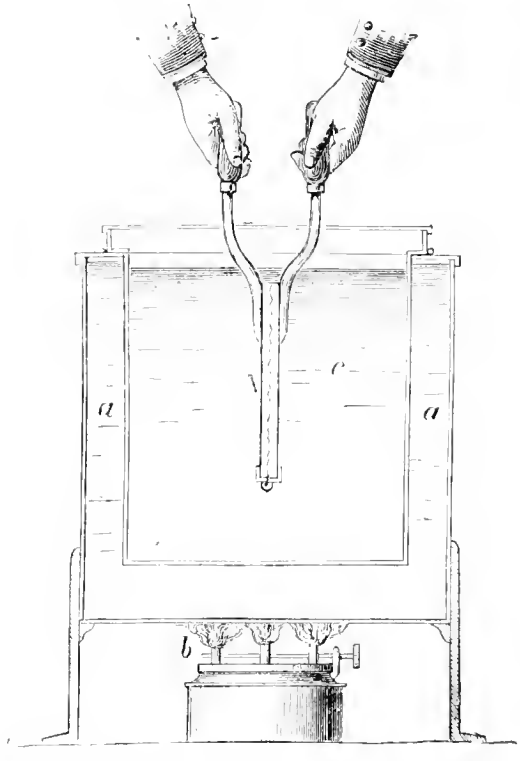
It will be seen by the illustration that it consists of wooden stand, to which is attached a large wheel worked by a handle. This, by means of a strap, actuates a pulley fixed to a shaft, having an excentric slot cut, which in turn gives a horizontal motion to a sharp steel blade. This is set at an angle and is fixed by means of thumb-screws. The frame containing the comb is placed into a frame-work, which is slightly inclined, and has a rack at the loose end, which is worked by pinions attached to the shaft, on which the driving-wheel is fixed. In front and between the two standards of the stand is placed a trough to catch the cappings, and below the frame is another trough to take any honey that may run out of the comb. On the left-hand side is a small vessel to hold water and a sponge or cloth. In this machine, whilst the cutting blade has a horizontal motion, the framework which carries the comb has a nearly vertical motion. It is placed at a slight inclination, so as to enable the comb to lay in it without movement.

For uncapping the framework is raised as high as it will go, the frame of comb placed in the recess prepared for it, and on which the edges of the frame rest, kept in its place by means of two buttons seen at the two upper corners. The knife is then adjusted by means of the thumb-screw. A turn of the handle on the driving-wheel causes the knife to move backwards and forwards at an enormous speed, at the same time that the frame moves down and the whole frame of comb is uncapped in the twinkling of an eye, the cappings like a sheet of paper falling into the trough in front. The knife is then pulled forward, and the reversal of the driving-wheel will bring the frame up to its original position, when the comb is reversed and the other side done in the same way. After every cut the knife is wiped with the damp cloth to free it from any particles of honey or wax. With this machine the combs are always cut perfectly even, leaving which is a great advantage, as the bees have less work, and when they are perfectly flat the bees will retain them so and preserve an even space between them. After the combs have once been cut by this machine the cappings will come off with very little honey adhering to them. Where a large number of combs have to be uncapped this machine would be invaluable, and would very soon save its cost, the rapidity with which the work is accomplished being marvellous.

GUAZZONI'S COMB-FOUNDATION MACHINE.

Another machine which interested us at the Exhibition in Milan was a comb-foundation machine, the invention of M. Guazzoni's, of Golasecca, to whom a gold medal was awarded. This machine, which resembles the Fari's and that described and illustrated in the *British Bee Journal* in May 1883, but differs from these in that the plates instead of being of plaster of Paris are made of metal, and are somewhat like the plates used before rollers were introduced. M. Guazzoni's plates in his hands produce comb-foundation with walls as good as the roller machines, and would be useful to amateurs and those bee-keepers who would like to make their own foundations; but knowing as we do the care that is needed in properly manipulating wax to get uniform sheets, we do not think that these plates will replace rollers. Two metal plates are fixed to each other by hinges, and have two handles, as shown in the illustration. When in use the plates are covered with very thin starch paste, and are then plunged, partially open, into the molten wax, closed, and then withdrawn. Then the superfluous wax is taken off, the machine A opened, and the sheet of foundation (F) removed. The wax has to be kept at an equal temperature; and for this purpose the tank C containing the wax is placed into an outer vessel A filled with water, the temperature being kept up by the lamp B. This way of making foundation necessitates a large vessel into which to plunge the plates, and consequently the use of a large quantity of wax, and not within the pecuniary means of every small bee-keeper who can make foundation in the following manner:—Under one of the plates place a board a little larger than the plate well saturated with water; the wax can be melted in a small saucepan placed into a larger one containing water. The plates are moistened with honey diluted with water, and a small quantity of molten wax is then poured on to the lower plate, the other is immediately lowered, and the excess of wax is pressed out on to the board, from which it is easily detached. A little practice will soon teach how much to pour on without causing much to overflow. The plates are made the size of comb-foundation required, and by cutting round the edges with a knife the sheet is removed ready for immediate use.'





A Dangerous Insect.—We extract the following from Major-General E. F. Burton's *Reminiscences of Sport in India*, a highly interesting book, published by Messrs. W. H. Allen & Co. The dangerous insect is a large wild bee, presumably *Apis dorsata*, which builds its nest something of the shape and size of a small cart-wheel on horizontal branches of trees, and under shelves of high rocks:—

'These bees are most irascible, and, if disturbed, will fly out in swarms on the intruders, whether man or beast, and follow them for miles. I once found my tent pitched under a tree upon which was one of these great nests, and very uneasy did I feel during that day; fortunately no fire had been lighted, or the swarm would infallibly have turned out, and we might have been chased away for miles, leaving the tent and equipage to their pleasure. Several fatal accidents have happened to sportsmen and others who have been so unfortunate as to disturb these insects. The case of two officers is well known, who, at the "marble rocks" of the Nerbudda River, were attacked and driven into the river, where they were drowned. Many a camp has been attacked, and the horses and bullocks stung to death. Animals, when picketed or tethered, of course fall easy victims. The only way to escape serious injury or death is to wrap one's self up in a blanket, or anything of the kind which may be at hand, or to plunge into water and splash violently to save such part of the head as may remain exposed; failing the possibility of either of these expedients, the only chance is to lie down, with face, neck, and hands as much covered as possible, and to remain perfectly still; the bees then may leave the sufferer, thinking that they have finished him.'

room.' His hives were octagon boxes, an empty one being always placed under the brood, and the top ones, as they became vacated by the bees, were filled with honey, the queen going down, and the bees getting no desire to swarm, and prevented from doing so by always having an empty space near the entrance. We would also refer to Bromwich, who, more than a hundred years ago wrote his book on *Management of Bees in Colonies* in a hive worked exactly on the same principle. He also says, 'Bees kept in colonies require no attendance, as they never swarm unless forced to it by not raising them. During the last two centuries, the same principle has been advocated repeatedly, both in England and the Continent; and even to this day it is extensively practised in some countries. Nor is the system new as applied to straw hives. We had a straw hive in four storeys, the invention of M. Sauria, in 1845, which was fitted with bars, and worked on exactly the same principle.

It might interest some of our readers to know that the collection of hives, &c., we gave to the British Bee-keepers' Association, contains a set of Gedde's and Bromwich's hives, as well as the straw hive above alluded to; and we hope before long room elsewhere may be found to exhibit them. None of these hives proved satisfactory, and have by degrees been given up; and those using them now on the Continent are looked upon as far behind the times, and are certainly not amongst the successful honey-producers. This is the principle applied to frame-hives which Mr. Simmins claims as original. The destruction of the eggs in the comb we cannot look upon with favour, as being wasteful. The last feature in the system, we think, consists in giving bees ready-made combs in the sections instead of foundation; this we have tried ourselves, and we know that any sections not finished and extracted in the autumn are taken to much more readily than foundation. We cannot see the utility of dividing a hive into compartments, and separating the brood by separators, when working for extracted honey, as it is perfectly possible to get combs sufficiently flat to uncap even with the machine recommended by Mr. Simmins. The author does not use dividers for sections and yet recommends them for extracted honey. The amount of labour in working on this plan seems to be so considerably increased that it is doubtful if it can replace the more simple storifying principle. In his advertisement in our columns it was stated that 'No other bee-master has yet succeeded in so managing, that the bees actually have *no desire* to swarm, and the knowledge of this system alone will prove invaluable to all who intend to make a business of bee-keeping, as it is well understood that the act of swarming during the height of the season is a loss of at least fifty per cent to the apiarist.' Does Mr. Simmins really not know that not only have bee-masters for years worked on the non-swarming plan, but that they have also succeeded in so managing that the bees actually have no desire to swarm? We could mention many apiaries where this has been carried out, and also state that although last season was a prolific one in swarms, we did not have one, nor was there any attempt at swarming. In the instructions on preventing swarming in *Bee-keeper's Guide Book* these principles are insisted upon, and amongst the methods advocated is the one of supplying empty comb or comb-foundation to give the space needed. There is much useful information to be gathered in the pamphlet, and on some points we can quite agree with the author, although we should never think of using the sections he recommends or adopting his method, because we are able by much simpler means to work our bees both for comb and extracted honey. Mr. Simmins illustrates his sections and 'crate' (which he thinks should be the name of the racks into which the sections are placed). These sections, which have a bee space at top and bottom, are three deep in cases, standing across the frames, and differ from the Rev. G. Raynor's, which run the other way, having only one bee space at the bottom of rack, and are in our opinion more suitable for these very reasons. The bee space at top and bottom we consider injurious when tiering up sections, because it leaves a double space much too large between the two rows, neither can these sections with four projecting ends have such a neat appearance as those at present in general use.

The pamphlet also contains useful hints on obtaining strong colonies, care and sale of honey (although the use of galvanised tanks is not advisable), queen introduction, and dry-sugar feeding. The uncapping machine as a labour-saving implement, if effective, should be useful, but we should have preferred it constructed in such a way that the combs could be lowered by means of a frame like the Zorzi machine, instead of trusting it to one's hands. The author does not approve of reversible frames, and says 'that a simple and substantial moveable frame gives us all and more than all the advantages claimed for the reversible frame, which in whatever form used is always insecure.' Whether the production of wax will pay, or whether this system will supersede any and every other, time alone can decide. In the meantime no doubt there will be some who will try the method and give us the results of their experience.

Selected Query.

[265.] *In working for section honey, is there any advantage in using excluder zinc between hive and racks of sections? Does it interfere with the work of the bees, or reduce the possible honey harvest?*

We never use excluder-zinc, and believe that it interferes very much with the work of the bees. We would rather have a few sections spoilt by the queen breeding in them, knowing that we are more than compensated by the extra quantity produced.—EDITOR.

There is no advantage. It interferes with the work of the bees, reduces the honey harvest, and encourages swarming. Sufficient room for breeding below and tiering up sections above, with ordinary care will enable any one to dispense with excluder zinc, and to reap a larger harvest of sections of better quality, than by its use. If used at all it should cover the five or six central frames only, leaving the sides of the lower hive clear for the bees to ascend and descend.—G. RAYNOR.

I say no advantage, but much otherwise would result from its use. Obviously it is an impediment, and must cause a loss of time in gathering and storing honey.—J. GARRATT.

No; the excluder zinc is not required. It is a great disadvantage, and interferes very much with the production of comb-honey. I believe it makes as much as one-third difference in the quantity produced. I speak from my own experience, having tried it a year or two since with two hives side by side, one with and one without the zinc.—W. WOODLEY.

I never now use excluder zinc under the section crate. It only bothers the bees, and, being a good conductor of heat, is detrimental to keeping the brood nest warm. If the crate is properly made and is not kept too warm the queen will never, or hardly ever, lay eggs in the sections, unless the brood space is too small.—G. WALKER.

If there is a space of ⅜ths of an inch left between the top of the brood-frames and the bottom of the sections, excluder zinc is not necessary. I never use it. To a small extent only does it interfere with the work of the bees if of the correct size.—JOHN M. HOOKER.

There is no advantage whatever, neither is there any necessity for zinc excluders with a *properly constructed*

be aware, our honey is only rivalled by that of Mount Hymettus; and your George Armstrong tells us, in his *History of Minorca*, published in 1750, when he was Military Governor of the island, that owing to the great abundance of aromatic herbs our honey is unsurpassed. Considerable quantities of the nectar were at that time exported to England *viâ* Gibraltar.

Now, as to our race of bees. I am informed it is unknown in England: but they must be of a superior kind, for they work and breed tremendously, and not only do they wear the three classic gold bands, but when ventilating they put out a fourth and thicker line on their posteriors, which occasionally resembles a triangle in shape. And they wear grey jackets that are golden in the sun, when seen through a magnifying glass.

I regret I am unable to ascertain whether our bees really gather pollen from *Clematis Vitalba*, it having ceased to bloom. But as in November and December I knew of no flowers then blossoming bearing white pollen, I concluded it came from the *Vitalba*, which they visited extensively. Shall look into the matter next season.

Our almond trees are again in blossom, and a pretty sight it is to see in mid-winter trees in full bloom with not a green leaf visible. I can only compare it to our trees in America after a snowstorm. The crop will be short owing to a succession of gales from the north.

I see the Rev. Mr. Stroud writes from Africa that he has hives with three and four queens working harmoniously. How is this to be understood?

In looking over my populous hive, I found the inner blanket, which was thickly enamelled with propolis, pretty badly eaten up. Is it the bees? Also a place on it, nearly over the entrance, quite mouldy-like. Did the bees want ventilation? I have since found the wool thus gnawed from the blanket under the hive entrance, together with two or three large larvæ, and therefore conclude the bees did it to get rid of their enemy, the mothworm.—F. C. Andrew, *Minorca*.

P.S.—Would some of your readers have the goodness to send us a queen-wasp in a newspaper? It need not be alive.

[It is probable that the moth-larvæ have utilised the blanket in constructing their passages.—Ed

'NORFOLK AND NORWICH BEE-KEEPERS' ASSOCIATION.—REPORT.'

[271.] I am not aware if you have seen the report of the above Association. There are one or two points in it to which I should like to call the attention of our county members. Originally there were nine rules, now we have ten. I know, sir, that you are not a Norfolk man, but to us it looks very much like wishing to exclude such men as the Rev. J. Lawson Sisson and others from attempting to make the tent what it should be, and what it *must* be, if it is to pay, *popularly interesting*. I will give two quotations from editorial articles from the *Eastern Daily Press*:—'The labours of our facetious and untiring correspondent, the Rev. Lawson Sisson, are not likely to go unrewarded.' And again:—'When we sit in our parlours eating bread and honey, we may thank the Rev. J. Sisson for the vigour with which he has promulgated in these districts the gospel of the bee.' Since 1881 this veteran bee-keeper has written nearly one hundred letters to the various papers upon apiculture, and I assure you that it is men of ability like this that this new rule is aimed against. Then, again, what atrocious spelling we get: amongst the advantages of membership, 'The *principle* advantage,' &c.; and further on, 'Bees suffering from *dysentry*,' '*priviliged*.'

'The committee decided not to offer prizes for bee-furniture, feeling that a large amount had hitherto gone to those who did not interest themselves in the Association.' In spite of this they fooled away 4*l.* 5*s.* as *hire* for an implement tent. Again, we have the addition of seventy-four new subscribers, and yet in the balance-sheet subscriptions only amount to 54*l.* 15*s.*, while in 1882 the subscriptions were 62*l.* 10*s.* 6*d.* Then, again, as assets, they put down 'Bee-tent and appliances, 25*l.*' Nonsense! 10*l.* is nearer the mark. 'Skep, 6*s.* 6*d.*' What a wonderful skep! Then, again, they say 'The manipulating tent was well patronised during the afternoon, 8*l.* 13*s.* 6*d.* having been taken.' Now, by report of 1882, when well-known and tried bee-keepers were allowed within the holy precincts of the inner circle *without any special* permission of expert or secretary, the receipts were 31*l.* 11*s.* Yes, and if our tents were only made more attractive by amusing lecturers, even more might and *would* be taken even in our county of Norfolk.

It is very painful for me to have to pen this criticism upon our county Bee Association. I *do*, and I ever shall look back with the greatest feeling of pleasure to the days when Mr. Sisson and myself first started an Association for this county. I grieve to think that those in authority should have allowed 'private jealousies and animosities to prevail over a regard for the general good,' &c. (these are the late Mr. Peel's own words, though not written of our Association), and should have ventured to issue a report which, to say the least, is grossly misleading.—Alfred E. Booker Hill, *The Chase, King's Lynn*.

EPITAPH ON THE ZULU QUEEN.

Within this glass there lies, alas!
The body of a queen,
Of princely birth, of priceless worth,
With bands of golden sheen.

Why did she die? Ah! tell me why,
From Afric's sunny clime,
Through ocean's roar, to England's shore
She travell'd in her prime.

But common bees (no judges these
Of excellence of birth,)
Refus'd to take, for Walker's sake,
Her, at her sov'reign worth.

So did she die, and outstretched lie,
Her royal heart was burst,
Bereft of breath, still fair in death,
His last love, and his first.—R. S. Routh.

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[203.] *Croaking Noise.*—I know my cousin 'South Cornwall' well, and as he is such an intelligent bee-master my answer need only be this—You have no doubt often heard a queen 'piping,' and seen the movement of her body when doing so. Well, just in the same way does the drone act, which I found out by very careful observation.—The Manager, *North Cornwall Apiary, Rowe, Bodmin*.

[254.] *Carniolan Hybrids.* (M. J. A.)—Very good; they are less irritable than Ligurian and black hybrids.—W. B. Webster.

[255.] *Dry-sugar Feeders.* (G. S. F.)—There are various makes of dry-sugar feeders. Having found 'trouble' in inserting the wooden frames in interior of frames, let me suggest that you would find one of Mr. Meadows' round tin sugar-feeders placed over hole in quilt at top of frames of great service.—Melissa.

[256.] *Two Queens in one Hive.* (Trevor Saynor.)—Such a thing is possible, using excluder zinc, but would be of no practical utility, in fact very much the reverse. The whole of the internal arrangements of the hive would be turned upside down. Fancy the poor bees struggling through two or three sheets of zinc loaded with pollen for the larva in the end division; how much would they have on their legs by the time they had arrived at their destination? and how about the drones worrying to get outside, stopping up the

holes, and so preventing ventilation? the queens fighting through the bars: it would be a mess. Do not think of doing such a thing.—W. B. WEBSTER.

[256.] *Two Queens in One Hive.*—It may be done if perforated zinc be used instead of excluder-zinc and give two entrances, that, of course, would make it practically a twin-hive.—WOODLEIGH.

[257.] *Division Board.* (F. L.)—It is very seldom bees leave much honey in the last comb by the time winter commences, when your plan of a division board would be as cold as an ordinary one. If you want a warm dummy make it double and fill it with cork dust.—W. B. WEBSTER.

[257.] 'F. L.'s' proposal is feasible, but to do so he must place his division-board or dummy farther from the last frame to give room for his half-comb so that the economy of space would be *nil*.—WOODLEIGH.

[258.] *Drone Foundation.* (A. B. Johnston.)—Bees build, fill, and seal over drone comb quicker than worker. Drone foundation is frequently placed in sections where whole sheets are used. I used a few whole sheets last season; the midribs, when eating the sections, were 'a caution' to any one having carious teeth. Do not use excluder zinc under racks; it is a nuisance.—W. B. WEBSTER.

[258.] 'A. B. J.' answers the first part of his query by his suggestions at the end, *re* the excluder-zinc over frames—sections filled with drone-size comb do not present such a nice flat even surface as those filled with worker-size.—WOODLEIGH.

[259.] *Weight of Combs in 1-lb. Sections.* (A. B. Johnston.)—Five drachms, forty-six grains, troy, or just under one ounce avoirdupois. This is rather heavy. They vary considerably.—W. B. WEBSTER.

[259.] 'A. B. J.'—Not more than one-eighth of an ounce.—WOODLEIGH.

[260.] *Artificial Queen.* (A. B. Johnston.)—Queens reared artificially, or rather through the intervention of a skilful apiarian, are quite as prolific as those reared without such aid. The above is, I presume, your meaning of an artificial queen; but such a thing as an artificial queen I never saw, except in the shape of a humble-bee at the end of a line when trying to entice Mr. Chubb from the mill-stream.—W. B. WEBSTER.

[261.] *Honey Receptacle.* (East Cumberland.)—It would be the wisest and cheapest plan to procure a properly made honey-drum. You would have to wax the inside of your barrel in order to prevent the honey soaking in.—W. B. WEBSTER.

[261.] I think it would be to the advantage of 'E. C.' to purchase a cylinder at once with strainer, and tap at bottom, as the specific gravity of ripe honey would cause it to sink below the thin watery unripe honey, where it could be drawn off at the tap and the other left to ripen; but if 'E. C.' leaves his combs in hive to be sealed his honey will be ripe when extracted, and will not require maturing in bulk.—WOODLEIGH.

[262.] *Painting Hives, &c.* (W. G.)—Your plan would answer admirably. Endeavour to take the frames out *en bloc* by placing strips of wood under the ends of the frames, especially if the weather is at all cold; there is no fear of losing queen if done carefully and observantly. (2.) At this time of year, yes.—W. B. WEBSTER.

[263.] *Syrup and Honey.* (Br. W.)—You need be under no apprehension of such an event occurring; bees will want all the stores they can get for rearing their brood before the honey-flow comes. Uncap the syrup a little at a time and place such frames close to outside of brood-nest; they will be emptied speedily.—W. B. WEBSTER.

[263.] (Br. W.)—The stored syrup will most probably be all required for food ere the honey season, unless 'Br. W.' overfed in the autumn and clogged the combs with a large surplus. I would advise uncapping some of it and thereby induce breeding, and of course a larger consumption of stores.—WOODLEIGH.

ERRATUM.—In reply to Query 215, page 143, *for* Baldwin's low skeps *read* bar skeps.

Will 'W.,' who advertised appliances for sale in our two previous issues, kindly send us his address? Letters addressed to initials are not taken in at the Post Office.

Queries.

[272.] *Cleaning Extractor.*—I have a honey extractor made of tin, which, through want of proper cleaning after use by borrowers, has got slightly rusted. What can I do to it? Is there any varnish or paint I can apply after thoroughly cleaning that would not affect the honey when in use?.—J. I. S.

[273.] What is the best material for section dividers, and what is the best arrangement for same?—F. McK.

[274.] What is the probable amount of honey a super, size $18 \times 13 \times 4\frac{3}{4}$, would contain?—it is made to contain six combs with glass dividers.—R. CAIRNS.

[275.] *Lonely Queen.*—Since I last wrote, I found in *another* apiary a fine healthy young queen deserted by her subjects, but the hive was *full* of stores in capital condition, and had a feeder on for 'spring stimulation.' Can any one give me a reason for this, as the kind replies to my former question do not quite meet the case?—OLD DRONE.

Echoes from the Hives.

Nyon, April 9th.—Colonies in my apiary are strong for the season. Many have bees covering eight frames (thirty-two litres), and have three, four, and five frames of brood; others cover seven frames, and one only six frames.—E. B.

[Our correspondent uses the Dadant hive, the frames being nearly double the size of our Standard frames.—ED.]

Geneva, Switzerland, April 2nd.—I recently visited M. Fusay. He was examining the hives in his pavilion, which is constructed on a new principle. He opened a hive which had not been touched since last autumn; this was, however, easily seen. It contained eleven or twelve very large frames of comb (a little larger than the Dadant);* the colony occupied not quite completely five combs (in his note book he put down four covered). We reckoned, I think, 65 lbs. of honey (at any rate not less); and not a single comb was mouldy. He said he had not found one mouldy comb in all the hives in the pavilion.—ED. BERTRAND.

Oxford, April 1st.—The past week has been characterised with cold and furious winds, and heavy storms, which has been successful in keeping the bees inside the hives and stopping pollen gathering, which had been carried on extensively during the previous fortnight. The occasional bright sunshine has worked much harm amongst stocks, as the insects have been drawn forth to a cruel death; owing to the clouds covering the sun while the bees are flying, and the cold overpowering them. We still hope for better times, and, as hope is spoken of by an old writer as 'The beauteous sun, which colours all it shines upon,' better times may come. But, on any account, we in this part of the kingdom cannot be so forward as we have been on previous occasions.

South Derbyshire, April 8th.—For the last fortnight the weather has been quite disheartening—cold, gusty winds, with showers of rain and sleet, have kept the bees in every day. Have not touched a hive since first examination. Out of my seventeen hives, one only has come to grief, dysentery and subsequent dwindling being the cause. This hive was the only one on which I left the old propolised quilt through the winter.—M. J. ASTLE.

NOTICES TO CORRESPONDENTS & INQUIRERS.

ZERO.—*Doubling.*—The space bees usually respect is between $\frac{1}{4}$ to $\frac{3}{8}$ of an inch. Our frames reach to within $\frac{3}{8}$ of an inch of the bottom, and as the top of the frames are level with the top of the hive there is generally the $\frac{3}{8}$ inch space between them.

E. T.—*Vignole System of Swarming.*—1. The book you require is *La Ruche*, by A. Vignole, 2½ francs, published at the Bureau de l'Apiculture, 59 Rue Monge, Paris. There is no English translation of it. 2. This depends upon the strength of the colony and the prolificness of the queen. Vignole says from twenty to twenty-five days. 3. No; the manipulations are performed on the thirteenth

* About double the size of our Standard frames.

and eighth days, that is twelve and seven *clear* days between. 4. A.'s first swarm retains stand No. 1, the place A occupied.

FLORIST.—*Melilotus leucantha.*—Melilotus leucantha is a biennial native of Britain, and other parts of Europe, also Siberia and Northern India; it is an introduction into North America. It grows to the height of two to three feet, and produces its flowers in July or August, on long racemes, or spikes. They are small, white, and sweetly scented with a honey-like odour; hence its name melilotus. It is not very showy, but is sometimes met with in gardens, grown for the scent the flowers emit. It is quite hardy, and a most excellent honey-secreting plant. It is known under the names of Melilotus vulgaris and M. alba.

C. 1. *Cleansing Hives.*—This should be done twice a-year—once in spring (now), and again when packing for winter. Take a spare hive, lift out the combs from No. 1 hive into it, clean and use No. 1 to put the combs of No. 2 in, and so on. 2. *Foundation for Sections.*—The less you put the better, as it frequently leaves a thickening of the midrib, which is unpleasant when eaten. A three-cornered piece is better than a square one. 3. *Last Year's Sections.*—Yes. If only bruised or chipped they will soon be repaired. 4. *Second Crate of Sections.*—If your colony is working well in the sections, and honey coming in abundantly, as soon as the sections are about half filled, raise the crate of sections and place the second beneath it. The bees will not desert the first, but will finish it off, carrying on the work in both crates. 5. *Removing Sections.*—It is better to leave them on until thickly sealed; they do not look so nice, but for commercial purposes thin seals are unsuitable, as they weep after being kept a little while.

NUCLEUS.—*Tin Separators.*—Unless you are expert at cutting tin straight you had better have them cut for you.

B.—*Artificial Pollen neglected by some Stocks.*—Probably they have a sufficient supply in their hives to serve the wants of the brood. The Mediteranean heath is not, we think, generally known; we shall be glad to hear more about it from you.

MISS M.—*Bar-frame Hive undisturbed for eight Years.*—The combs must be getting too old for use unless they have been rebuilt, which may be the case. At any rate, it is high time the hive was overhauled. It can be done at any time now, choosing a warm day. Having thoroughly cleaned the hive, insert frame of foundation in the centre of brood nest, and as the bees increase another. By this means the old combs will get to the sides of the hive without brood in them. They can then be extracted and melted down.

J. W. P.—*Bottle Feeders running Syrup.*—The cause is their not standing level, or the caps not fitting air-tight. If air can enter it will displace the syrup.

ANXIOUS.—1. The cause of variation in colour is that the bees are hybrids. No doubt they swarmed last year, the Ligurian queen went with the swarm, her successor mated with a black drone. 2. *Moors.*—You can only expect heather honey from those localities, and being within 1½ miles from them you will certainly get some.—3. You can get fruit-blossom honey if your bees are strong enough to gather it, and a harvest from clover and lime-trees (if any) later on.

ST. BERNARD, PENZANCE.—*Doubling.*—In working hives in the ordinary way for comb honey, our experience has been similar to yours, although we have sometimes had five frames covered if the stocks were extra strong in the autumn. On the doubling principle it is very different, as when there are three or four hives worked one on the top of the other, and the queen has full scope to lay, the populations are so large that it is not until quite late in the season that all the bees can be got down into one body box. We have had so many bees in a hive that we could only remove the frames from the second storey, and leave the box so as to give the bees sufficient room until the cold weather caused them to cluster more closely. With such colonies, it is not extraordinary to find in the middle of March enough bees to spread over eight combs. We did not mean it to be understood that at this time we expect the bees to be crowded on eight combs, although we like to see enough to cover them thinly, and we then reduce the combs to as many as will crowd the bees, probably to six. Of course, if we could get sufficient bees to crowd eight combs, we should like it better, and we should not require to stimulate so much, but we generally find we can easily crowd the bees spread over eight on to six. If young and prolific queens are only kept, and breeding kept up late, the bees ought to go into winter quarters crowded to overflowing on ten combs with sufficient stores, which ought not to be exhausted when they are first examined. With large populations working in four storeys, there is not much difficulty in having sufficient bees to fill one body-box and if most of these are young, as they would be if the queen were kept breeding late, and all the brood from second storey brought down into this, they would come out strong in the spring. With Cyprian and Syrian bees, the queens generally lay later in the season, and commence breeding earlier in the spring. Black bees and Italians do not do so to the same extent. Our frames are not so large as the Dadant, being nearly half the size, but we received a letter from a friend who saw a hive opened in which the bees occupied five combs, and he estimated that they would completely cover four. These frames are larger than the Dadant, so quite double the size of our standard frame. They would be equal to from eight to ten of our frames, so that you see our experience of large hives does not differ very much from those who have been in the habit of using them for some time (see 'Echoes.') You do very well if you are able to work up your combs of bees to produce 100 pounds a stock and leave abundant stores for the longest winter.

C. W. R.—The sample of American cloth forwarded is not suitable on account of the smell attaching to it, otherwise it would answer the purpose.

NOVICE, C. R.—Your bees died solely from starvation. You should have given more winter food of sealed store to so strong a stock of bees. You may use the old comb again, but cut and melt down the drone-comb and those parts which are clogged with pollen. Leave the sealed honey in the hive for the present, and occasionally uncap a little. Supers should be put on when the hives are full of bees, and when honey begins to come in freely, generally from the middle of May to the beginning of June, according to the season. They should be taken off when filled and the combs nicely sealed over. A hive which has no brood or eggs at this date is queenless, and should be united to another. It is useless to rob another hive of brood to give to it.

A. ROCHER.—You can get good enough hives to begin with for about 12*s.* 6*d.* We prefer them without legs, and the alighting board to reach the ground. Certainly have the frame at right angles to the entrance. If you wish to go in for extracted honey only, you will not want any special supers, and all the hives can be made to pack flat when not wanted for use. The pamphlet you allude to is quite out of date, besides, we do not recommend the system, and we consider feeding syrup to produce so-called comb honey fraudulent. The sugar is not converted into honey. Get *Modern Bee-keeping*; it only costs 6*d.*; is a most reliable guide.

MRS. A.—*Carniolans crossed with Ligurians.*—The cross would not differ much from one with black bees. Possibly the tendeney to swarm existing in Carniolans might be perpetuated.

C. C. M.—*Mouldiness of Combs.*—The cause is undoubtedly damp. Remove the combs, dry them in front of a fire, and brush off the mould. Uncap the honey in one, and give it to the bees, and the others as they can take them, Lose no time in shifting your bees into a dry hive with proper roof to it, and thoroughly dry all the quilts and coverings.

NORTH COUNTRIE NOVICE.—1. *Proposed Shed.*—From your description of your premises you had better not erect any shed, but place your hives facing the south and west, keeping out of the shadow of the house. The house will not interfere with the flight of the bees. 2. *Feeding.*—Yes; feed gently at once, about a gill each evening to each hive. The proportions you name are correct for spring feeding.

Ash.—*Reducing size of Hive.*—You should brush or shake the few bees off the combs before putting behind the dummy. If you were so careless as to put the queen behind it, she might perish, or the bees might join her there. 2. *Zinc for Frame Ends.*—This is very seldom used now, metal ends to the frames having rendered it unnecessary. It should be stout, one sixteenth inch base, and screwed firmly on. 3. Mr. Simmins' frames are same outside size as Association, but being of stouter wood, the inside size is less. 4. *Quilt for Storeyed Hive for Extracting.*—One thickness of felt with a board on it. 5. Of Mr. Huckle, Kings Langley. Dates, January 15th, June 1st, and October 15th, 1884.

A Young Beginner.—*Separators.*—You would find tin separators serve your purpose best: they can be cut to size by any ironmonger: wood separators are also very suitable, and more easily to be obtained. Zinc excluders are objectionable: with a little degree of care the queen will remain in the body-hive.

Surrey Bee-keeper.—*Red Clover.*—Ligurians and Eastern bees can obtain honey from red clover (Trifolium pratense). It is probable also that Ligurians crossed with Carniolans might be able to take advantage of its presence; but to the ordinary black honey-bee red clover is valueless.

S. T. T., Jun.—The present position of your stocks enables us to say that your mode of procedure so far has been successful. It is desirable that you should continue to stimulate by gentle and regular feeding. The evidences that you mention would induce us to believe that if you could inspect the interior of the hive you would find the bees in all stages, from the egg upward. The blackthorn will be found of great service to the bees. The gorse affords the bees pollen, and some honey, but not in a very great degree.

Amateur.—It is practicable, if you so wish, to super skeps by putting on glass jars of the size mentioned; it would be of some assistance to the bees to give them some kind of starters.

West Cornwall.—1. With bees healthy, and with queen breeding, you have every prospect, by gently and regularly feeding, to build up your stock by the beginning of June. 2. The mother-bee goes off with the first swarm, consequently the hive from which the swarm has issued will have the following year a young queen. In the event of the first swarm re-swarming it would be headed by the mother-bee. All the after-swarms would in time, if fertilsied, have young queens. Have you rightly apprehended Mr. Simmins' statement?

J. C. I.—The temperature of the parent stock at the time of swarming rises very suddenly. The average temperature of the hive is from 90 to 95 degrees, at swarming time, rather over 100.

Received from Mr. J. R. W. Hole, of Tarrington, Ledbury, Herefordshire, his Illustrated and Descriptive Catalogue of Bee-keeping Appliances. This catalogue contains much useful information for amateurs and practical bee-keepers. With it he has forwarded one of his 'Herefordshire Simplicity Supers.' It contains twelve 1lb. sections, constructed so as to be placed on the frames of a standard hive without crushing the bees, and to be removed, when filled, without the jarring so irritating to bees. The sample received is well put together.

From Mr. Redshaw, of South Wigston, near Leciester, his 'Illustrated and Descriptive Catalogue of Hives and Bee-keepers' Appliances for Taking Honey without Destroying the Bees.' This is a very ample and well-arranged catalogue.

From Mr. A. Hutchings, a sample syrup bottle-feeder. This has various merits: the stand is made of all wood, which, being a non-conductor of heat, renders it very suitable for the bees; then the grains of the wood crossing each other there is no fear of buckling or sagging. The amount of food given can be easily regulated. It will be found a very handy, practical feeder.

From Mr. Kinnaird Jenkins, of East Horsley, Leatherhead, models of a frame-holder and frame-carrier. These we retain until such time as a place can be provided for the inventions of ingenious bee-keepers,

Somerset Agricultural Association Meeting

At WELLS, May 11th, 12th, and 13th, 1886.

THE SOMERSET BEE-KEEPERS' ASSOCIATION will give PRIZES for HIVES, SECTION-CRATES, SKEP COVERS, &c., at the above Show. For Entry Forms and full particulars apply to the Rev. Charles G. Anderson, Otterhampton Rectory, Bridgwater.

By the kind permission of the Council of the Somerset Agricultural Association, the BEE TENT of the S. B. K. A. will be on the Ground. LECTURES and MANIPULATIONS will be given each day.

CHARLES G. ANDERSON, *Hon. Sec.* (135)

NOTICE.—For late Pollen grow SUNFLOWERS. SEEDS from Best Varieties, 3*d.* per Packet. Address W. Hollins, 9 Tillington Avenue, Stafford. 128

Seventh Edition. Twelfth Thousand.

BEE-KEEPERS' GUIDE BOOK. Containing Management of Bees in Modern Moveable Comb Hives, and the Use of the Extractor. By Thos. Wm. Cowan, F.G.S., F.R.M.S., &c. With numerous Illustrations. Fcap. 8vo., price 1*s.* 6*d.*; or in cloth gilt, 2*s.* 6*d.* Postage 2*d.* To be had of Houlston & Sons, Paternoster Square, all Hive dealers, Secretaries to Bee-keepers' Associations, and of J. Huckle, *British Bee Journal* Office, Kings Langley, Herts.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

THE
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Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

THE APIARIAN EXHIBITION AT SOUTH KENSINGTON.

It is with feelings of great pleasure that we refer our readers to the report of the Exhibition's Sub-committee on their negotiations with the authorities of the Indian and Colonial Exhibition and the Royal Horticultural Society, and beg to congratulate the Association on their having secured so excellent a place for their proposed exhibition as the Royal Conservatory, and in having obtained the co-operation of the Royal Horticultural Society in their undertaking. The Committee have shown much promptitude and tact in having in so short a time overcome the seeming obstacles in their path, and in having brought the preliminary business to such a practical conclusion. The Committee having so far successfully performed their part, it lies with the bee-keepers of the United Kingdom to do theirs. The success of the Exhibition now depends upon the support given by the several affiliated Associations and by the manufacturers of bee-appliances who will chiefly be benefited by the Exhibition, and the amount of the subscriptions to the fund now being raised to guarantee the Association from any possible loss. The grand design of the Exhibition is to demonstrate to the world, and especially to those who may exhibit honey in the Colonial Exhibition, that Great Britain is a honey-producing country; that since the establishment of the B.B.K.A. there has been a remarkable increase in the number of those who have devoted themselves to this new industry; and that in the future there is a capability of further development, so that the demand of the British public for honey can be supplied by their own countrymen without having recourse to extraneous sources.

The Committee suggest that the principal feature of the show should consist of a general exhibition of British honey, the produce of all parts of the United Kingdom; and to carry out this purpose they request that each affiliated County Association in England and Wales should exhibit a carefully-selected display of honey produced in its own county, and from the apiaries of its own members; and that their displays should be competitive for special prizes to be awarded to the Associations. They also desire that there should be a similar competition among the recognised associations of Scotland and Ireland. This competition among the respective Associations we consider to be an excellent suggestion, and one that should commend itself to the several County Associations. It is very desirable that good and attractive prizes should be offered for the competition, and that such prizes should be divided into two parts: (1) for the honey itself, and (2) for the taste displayed in the mode in which it is staged. A county may be able to produce good honey, but unless it is accompanied by style in presenting it to the public eye it is not easily disposed of. Whatever progress has been made in former exhibitions in taste and display, we would urge that on this occasion every pains should be taken to make a distinct and visible advance, so that this exhibition may prove more attractive than those of former years. A good impression is always left on the mind when the eye beholds a show arranged in a pleasing and artistic manner.

The Central Committee have commenced the work well, and will, doubtless, carry forward their plans and preparations in the same spirit, and they confidently look to the Associations for their earnest co-operation. The results of the Exhibition will depend on the mutual support furnished by the Central and affiliated Associations; and it is hoped that both will combine to employ their experience and their best energies to ensure a success which will be gratifying to all concerned in it.

SOUTH KENSINGTON EXHIBITION.

Additional subscriptions to the Guarantee and Donation Funds:—

The Rev. F. T. Scott	£3	3	0
The Berkshire Association	2	2	0
Miss Gayton	0	10	0
Announced in our last issue	91	16	0
	£97	11	0

CERTIFICATES FOR USEFUL INVENTIONS.

We are glad to notice that the Committee of the B.B.K.A. have a desire to render the Quarterly Conversaziones more practical in their results. Besides the papers that may be read on these occasions they propose to invite bee-keepers to forward for exhibition and criticism inventions and improvements that may be useful to those engaged in apiculture; and should any

of those be found worthy of commendation to award certificates to the exhibitors. Such certificates coming from so competent a body and so able to judge of the merits of the article and its utility to bee-keepers would be appreciated and eagerly sought for—at the same time certificates so given would be a safeguard to the public, who would thus know that the article they purchase was one that would be serviceable.

GLEANINGS.

In the *American Bee Journal*, J. B. Mason says, 'It was but a few years ago that the bee-keepers of Maine looked with distrust upon the reports of 100 lbs. of honey from a colony, that was occasionally reported by eastern bee-keepers; but, with improved implements and modern management, to-day many Maine bee-keepers can report 100, and even more, pounds of comb honey from a single colony.'

In *L'Apiculteur*, M. Bellot says, that in September he takes the honey from a certain number of hives. The driven bees are then united to other hives, which are not so strong. In one of these unions at the end of September, he did not notice a dead queen thrown out, as usual. Fifteen days later, when he had got some Italian queens he wished to introduce, he searched for the queen of this united colony, and found a very aged one, which he at once destroyed. His astonishment, however, was great when in returning the bees to the hive he found another queen, equally aged and of little value. His explanation is that the bees, whose instinct is wonderfully developed, finding themselves in the presence of two queens equally worn out, or very nearly so, and foreseeing the death of one at no distant date, did not destroy one for fear of the other perishing before she could be replaced; they therefore wished to preserve both.

In the *Illustrierte Bienenzeitung*, C. F. H. Gravenhorst calls attention to an article by Dr. Hess on a bee-louse, which, besides giving much new information on the subject, also shows the reason why the remedies M. Gravenhorst has for so many years advocated and applied have been so efficacious. The louse (*Braula cæca*) principally attacks queens, and is difficult to catch, being so swift in its movements. The eggs, according to Dr. Hess, hatch inside the insect, and the young larvæ are nourished by the secretion of a gland; but when they arrive at maturity they are deposited on the floor-board of the hive, when they take the chrysalis form, from which they emerge at the end of fifteen days. The young lice remain on the brood until they have a chance of climbing on to a passing bee. Strong fumigations with tobacco dislodge the lice, and the floor-boards are cleansed several times with a mixture of water and carbolic acid. It is important to keep the floor-boards clean.

In *Gleanings* A. I. Root says, 'For some years samples of comb foundation have been sent out with very deep walls, even so deep that the queen might lay eggs in this foundation, or the bees might store a little honey in it without working over it at all. The walls are much thicker than those of foundation with shallow walls. He has been carrying on experiments with a view to testing which the bees work on most easily. To test the matter he placed pieces of both kinds of foundation in empty frames in the centre of strong colonies. The result is, the bees take hold of one foundation just as quickly as the other, and they draw it out into comb at the same rate of speed. But when the finished comb is held up to light there is a very remarkable difference. The deep-cell heavy foundation has the bottom just about as it was made by the foundation rolls—the deep walls are also about the same—while the other is thinned down in both walls and base of cell, so near to the natural comb that it is difficult to distinguish the difference. The foundation he recommends is seven square feet to the pound for brood-combs. Some manufacturers make it as heavy as from four to six feet to the pound, and some specimens have been made that only gave 3½ square feet to the pound. Such foundation is extravagant, being very expensive, and has no merit except that it is handsome to look at.'

In the *American Bee Journal*, W. L. Hutchinson says, in preparing bees for a journey in frame hives, he does not put sticks down between the combs, as usually recommended, but has had better success without. He fastens the frames by merely nailing their ends with 1½ in. nails to the rabbet of the hives, leaving the heads to project a quarter of an inch, so as to easily withdraw them. When fastened in this manner, the frames cannot slide about, neither can they swing together close enough to injure the bees, while their not being fastened at the bottom allows the frames to move slightly under the influence of a sudden jolt, which assists the combs materially in sustaining the shock without injury.

Foreign.

ITALY.

Although rather cold and changeable, the weather of last month has not been worse than is generally expected to be in March. No general harm seems, moreover, to have been done to apicultural interests during the last month, and bee-keepers will be satisfied if April is, comparatively speaking, equally favourable to brood-rearing.

The Library of the Association has just been re-organized by Signor Fumagalli. From his report, it appears that it now consists of over 600 volumes, and that it is constantly receiving fresh additions, one of the latest of which being a book by Signor A. Ricci, of Empoli.

That well-known work upon *The Anatomy of the Bee* published by Signor Clerici under the auspices of the Central Bee Association, and favourably noticed in the *British Bee Journal* of February 1876, is exhausted, and no more applications for the work can now be entertained.

A stock of that famous bee, the *Apis dorsata*, has left the East Indies for Milan *viâ* Venice, and will be consigned to the apiary of Chevalier Luigi Sartori, of that city. Its results will be watched with considerable interest by the Italian bee community.

The Minister of Agriculture has given orders to the Central Association for a number of hives and swarms to be sent to several schoolmasters throughout the kingdom. The order is being executed, and the interest for bee-keeping on the part of the Government has been favourably received by all interested in bee industry.—From the *Apicoltore* of Milan.

FRANCE.

According to our contemporary *L'Apiculteur* of France, the severe cold experienced during the first two weeks of last month has had the effect of preventing the spreading of brood, but, generally speaking, apiaries do not appear to have been otherwise affected beyond the delay which such a check must of necessity involve. It is evident, however, that damage, although in an indirect form, has been caused in those district where rape and colza are grown on a large scale, the late severe cold weather having nipped the plants. The red trefoil has also been seriously affected in numerous localities.

As regards honey, the cold weather of the last two months has been very favourable to its consumption, and several holders have been enabled to dispose of their stocks at prices varying from 70 to 100 francs per 100 kilos for the ordinary kinds, extra fine having found buyers even at from 100 to 130 francs. Although stocks

are yet far from being exhausted, yet there is every reason to believe that by the time the new crop can be placed upon the market very little honey of last year's harvest will remain unsold.

The wax market has been very active in best qualities, some of which have found buyers at 315 and 320 francs per 100 kilos in bond. From Marseilles it is reported that owing to large arrivals the stock has increased rather than decreased within the last month, but with an active market a great deal will be disposed of in a very short time.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Committee Meeting held at 105 Jermyn Street on Wednesday, April 14. Present: the Hon. and Rev. H. Bligh (in the Chair), Rev. Dr. Bartrum, Rev. F. S. Sclater, Rev. F. T. Scott, Rev. F. G. Jenyns, Captain Bush, Captain Campbell, J. M. Hooker, H. Jonas, D. Stewart, G. Walker, and the Secretary. Letters were read from W. O'B. Glennie (Treasurer), Rev. G. Raynor, and Rev. J. L. Seager, regretting their inability to be present.

The Examinations Committee reported that the necessary arrangements for the first-class examination to take place at South Kensington on May 15th were in progress. The Exhibition's Sub-Committee reported as follows:—

'After an active negotiation with the authorities of the Indian and Colonial Exhibition and the Royal Horticultural Society, in which the prompt and business-like action of Mr. Buckle and the energetic influence of the Baroness Burdett-Coutts were very useful, the question of our having leave to hold the Show, as desired by us, in the large Conservatory was referred for the decision of the Prince of Wales; and His Royal Highness has directed that we shall have the desired permission, subject to a conditional reservation, which will not seriously incommode us. The Show is therefore practicable, and we have commenced the preparation of plans.

'The extent of the Show and the completeness of the details will be reported on when we know more certainly what assistance will be given by the several affiliated County Associations, and the amount of subscriptions to the Donation and Guarantee Funds. These subscriptions at present amount to 91*l.*: but we consider that a full and sufficient show ought to be supported by a fund of not less than 200*l.*

'We desire that a principal feature of the Show shall consist of a general exhibition of British honey, the produce of all parts of the United Kingdom, and that for this purpose each affiliated County Association in England and Wales be requested to exhibit—in form and manner, and under conditions as to quantity, &c., which shall be common to all—a carefully selected display of honey produced in its own county, and from the apiaries of its own members, these several displays to be competitive for special prizes to be awarded to the Associations.

'We desire also to arrange a similar competition, if possible, for recognised Associations of Scotland and of Ireland. We further propose to have an exhibition consisting of all the different kinds of honey obtainable in this country, and such other exhibits as shall be found possible to show the importance and extent of the honey industries of the United Kingdom.

'Exhibits of hives, and of apiarian appliances, and of any other matters interesting to bee-keepers, will also be provided for.

'The question of a Conversazione, to which colonial exhibitors may be invited, or as to any other social recognition of such exhibitors pending the Indian and Colonial Exhibition, must be reserved for a later stage of the proceedings.

'We have directed communications to be made to the County Associations, asking for their co-operation.'

'LIVERPOOL EXHIBITION.

'Arrangements are being made with the Royal Horticultural Society as to this Exhibition, and we hope to obtain a grant from them which with other receipts will protect us against loss. This is the first of the series of annual Provincial Shows of the Royal Horticultural Society; and we have reason to believe that they welcome our desire to contribute to the interest of their shows by placing the apiarian department under our management.'

The Sub-Committee's report was discussed at some length; the proposal for a county competition was generally approved. It was considered that an attractive appearance, combined with taste in staging the honey, should form a leading feature in such a competition.

It was resolved that in future the committee would receive newly-invented or improved articles relating to bee-culture for examination and discussion at the quarterly meetings; and in the event of such articles being found of special merit, the Association's certificate should be awarded.

NORTH-EAST OF IRELAND BEE-KEEPERS' ASSOCIATION.—CONVERSAZIONE.

On March 25th, a highly interesting conversazione was held in the Museum, College Square North, under the auspices of the above Association. The hon. treasurer (Mr. S. Cunningham) and the hon. secretaries (Messrs. A. Crawford and Paul M'Henry) deserve well of the friends of the Association for the arrangements made for the evening entertainment.

Messrs. M'Kenzie and Co. kindly lent for exhibition all the modern appliances in the most improved methods of bee-keeping; and these, being described by Mr. M'Henry, became quite a special centre of attraction. There were also scientific instruments, particularly microscopes, under which was to be viewed much that concerned the structure of the bee. The gentlemen who kindly furnished the table with these instruments and supplemented the gift with the advantage of their explanations, were Messrs. W. S. McKee, Joseph Wright, W. Swanson, A. J. Firth, Rev. H. W. Lett, Rev. J. Andrew, S. Wylie, and W. Welch.

Mr. C. W. Henderson, Norwood Tower, sent for exhibition some specimen sections of honey, the quality of which was highly complimented by several of the more skilful judges present. Mr. M'Henry also lent exhibits of honey.

The Chairman, Mr. J. K. M'Causland, J.P., Vice-President, stated that the object of that meeting was to give information so as to assist some of their friends who had recently become bee-keepers. As they were now approaching the honey season, they wanted to instruct them, and to induce others to become bee-keepers. They would endeavour to point out to them the right kind of bees to commence with and the best hives to use. The Association was not yet two years in existence, but they had been very successful in consequence of the energy of some of the members.

Rev. H. W. Lett said he must congratulate the North-East of Ireland Bee-keepers' Association on the success which had attended their first conversazione, and he hoped it would give an impetus to bee-keeping. They had done a great deal during the past two years in promoting bee-keeping, but, in spite of that great deal, of which they were not a little proud, he was sorry to say that in many cases bee-keeping had made no improvement. He held in his hand a survey of the County Down, which gave an account of bee-keeping eighty years ago, and illustrations of the improved hives then used. From that he found that the beehive of which they had heard so much lately was in use at the commencement

of the present century. In organizing that Association for the improvement of bee-keeping, they were only taking up the work which had been more or less carried on many years ago. The reverend gentleman then gave some practical suggestions to those about to commence bee-keeping. He advised them on no account to buy badly-made hives, as the price of them was only money thrown away. Let them get the best hive in the market, and the result would be most satisfactory. He had seen many failures arising from the use of ill-constructed hives.

Rev. J. Andrew referred to Canon Tristram's description of how bee-keeping was carried on in Palestine, where he had been travelling for the purpose of surveying the country, and Dr. Tristram stated that among the inhabitants at the present day the barbarous practice of destroying the swarms to obtain the honey was unknown. Mr. Andrew concluded by reading some extracts from Canon Tristram on the subject.

Not the least important part of the programme was the answers given to queries that were put in writing on the subject of the habits, &c., of bees.

The conversazione was brought to a conclusion shortly before ten o'clock.

WARWICKSHIRE BEE-KEEPERS' ASSOCIATION.

The annual general meeting of the above Association will take place on May 6th, at the Grand Hotel, Birmingham, at 7 p.m.; the Right Hon. Lord Leigh presiding, to be followed by a short lecture by the Rev. K. Suart, and afterwards a general discussion on bee-keeping.

BERKSHIRE BEE-KEEPERS' ASSOCIATION.

A branch of this Association has been formed for Wallingford and district, and it is hoped that all those who are interested in bee-keeping will join, through the honorary district secretary, Mr. Geo. F. Reely, of Brightwell, who has kindly undertaken the duties of the office, and from whom all information can be obtained.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

LONDON APIARIAN SHOW, 1886.

[276.] All County Secretaries have been asked for assistance from the counties towards meeting the cost of the South Kensington Show. I am sure that the vital importance to British bee-keeping of holding such a show at a time when a large colonial one is being held in London has only to be understood in the counties to insure a ready response. On all sides it seems agreed that the show is only possible provided that its cost can be met without drawing on the already fully employed funds of the B.B.K.A. It seems also absolutely necessary that not a moment should be lost in raising the required money, and making the arrangements. So, may I be allowed to suggest to my brother county secretaries that they will probably be easily able to find amongst their most prominent members several willing to pledge themselves to collect a certain sum from the other members in their neighbourhood? Each collector could name the sum he will guarantee, and the county secretary will then be able at once to tell the show managers what sum can be counted upon from his county.

In this way, in a few days, a guarantee could be raised amongst the affiliated County Associations which would insure a successful show being held, and this without taxing the ordinary income of each Association. The circumstances under which this show is to be held are very special ones, and seem to require special donations to meet them, without crippling the work of the County Associations at home. — COUNTY SECRETARY.

BEST SIZE SECTIONS FOR GENERAL USE.

[277.] I should be glad to hear from your correspondents the objections to the $4'' \times 4\frac{1}{2}''$ sections, as would, I venture to think, many others of your readers. My own objections to the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections are the following:—

1. Because they will not suit the standard frame, or rather a hive $9'' \times 14\frac{1}{2}''$ (inside measurement), thereby discouraging all such hives for valuable and interesting observation as Neighbour's Kilburn hive, &c., unless these hives were made with a deeper frame, which is not desirable for raising honey in sections—besides the increase in cost of hive.

2. Because, when a super of sections is placed over a standard hive, it does not cover the sides of the frames so much as desirable.

3. The lifts for $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections must exceed $4\frac{1}{2}''$ in height, and therefore two widths cannot be cut out of a 9" plank.

Whereas, in my opinion, the $4'' \times 4\frac{1}{2}''$ sections possess the following advantages over the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections:—

1. Besides economy in cost of hive and super, they economise the heat better than the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ (as in the Stewarton hive).

2. The sections being different in width and height do not require such extreme care in packing. Maxim—'Time is money.'

3. An oblong block of honey has a better appearance in a dish than a square block, and would therefore be more saleable, weight for weight.

If the B.B.K.A. adopt the suggestion of the Rev. G. Raynor, and make the standard sections $4\frac{1}{4}'' \times 4\frac{1}{4}''$ should not the standard frame be altered to $8\frac{3}{4}'' \times 12\frac{3}{4}''$ inside measurement?

It is true that the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections are the most generally used; but that is probably because there was no other section in the market which held 1 lb., until the $4'' \times 4\frac{1}{2}''$ section came up of late.

My object in writing this letter is not to prevent others from using the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections, but that before I give up using the $9'' \times 14\frac{1}{2}''$ hives, to ascertain whether the $4'' \times 4\frac{1}{2}''$ sections are to be given up entirely.

In the event of other bee-keepers besides myself desiring to use these latter, possibly some bee appliance manufacturers would be willing to guarantee to supply them in future years at equal cost and quality to the $4\frac{1}{4}'' \times 4\frac{1}{4}''$ sections.—A. T. WILMOT.

THE STING.

[278.] In the paper on the sting as an ovipositor, and discussions thereon in your columns, two opinions are advanced that appear to me to be erroneous. The first, as to serratures (barbs). These are described as natural to the hymenopterous ovipositor, and a state of perfection in development would consist in their being improved out of existence. I regard the matter in entirely the reverse aspect. The ovipositors of insects are naturally and originally smooth and polished; but in the hymenoptera

there is a capacity for developing on them serratures where they would be an advantage, and this occurs accordingly, to a marked degree, in the phytophagous divisions. It occurs slightly (as barbs) on the sting of the honey bee, not, I hold, as an imperfection to be removed by further development, but because the degree to which it exists is that which is precisely the most advantageous to the bee.

This brings me to the second point, namely, that these barbs *are* an advantage to the bee, and not the contrary. Half my argument may be briefly expressed by saying that this is one of those cases that has given rise to the observation or aphorism, that nature is most careful of the race, most careless and lavish of the individual. It is everything that the hive should be protected, it is nothing that a few worker bees should perish. If, therefore, the sting can be made more effective, that its use should lead to the death of its owner is immaterial in comparison. Whether the assailant be man, bear, or other honey-lover, he will instantly rub off any bee that stings him; and, since it is necessary that the sting be very sharp and slender so that the force at the command of the bee shall cause it to penetrate, a very trifling amount of poison would be injected, and the pain of the sting would almost instantly cease. But not so, the barbed sting remains behind, with its poison-sac, and continues injecting poison and penetrating more deeply, and the pain caused is thus much greater and more lasting.—T. A. Chapman, *Hereford.*

UNFERTILISED QUEENS.

[279.] I find, in reference to this subject, professional bee-masters from time to time through the *B. B. J.* saying, and even so recently as in the first issue of March of this year, that unfertilised queens are drone-breeders, that is, if we introduce an unfertilised queen to a colony of bees she will commence egg-laying, and these eggs, if attended to by the bees, will ultimately hatch out drones. Now are we, at the close of the nineteenth century to accept these statements as sufficiently demonstrated facts, or are we to say they are wrong, and cannot but be wrong, because they contradict every other sentence in the great volume of Nature? Now the question is not in reference to drone-breeding, but simply this: can there be progeny at all of any kind without fertilisation? If so, how? Perhaps some of your more advanced correspondents will take the matter up and give us the benefit of their views and experiments on this great question, which will, I have no doubt, interest many of your readers.—A Pupil.

[We would recommend 'A Pupil' to procure and study Professor C. T. E. Siebold's book *On a True Parthenogenesis in Moths and Bees* (London, 1857.)—Ed.]

QUEEN-RAISING IN SMALL APIARIES. [231.]

[280.] Perhaps relating my experience may be of a little value as an answer to Mr. F. G. Jenyns' query. I commenced bee-keeping in 1880 with one stock in a straw skep. At the commencement of 1883 I had five stocks in bar-frame hives and one in straw skep, which number I have not yet added to. In 1884, wishing to re-queen three of my frame-hives, I removed the old queens about three weeks before the honey-harvest might be expected to end, so that the hatching brood might keep up the strength of the stock for that time. In this district the honey-harvest usually ends with July, so I removed the old queens on 7th July; there were no queen-cells in the hives at the time. On the 24th they all had young queens hatched out and they were all laying about the middle of August. Neither my own nor my neighbour's bees stored any honey after the middle of July that year. The three stocks from which I removed the old queens gave me that year 39 lbs., 46 lbs., and 66 lbs. respectively of extracted honey, the average from my six stocks being 51½ lbs. Last year the same three stocks with their young queens, and a honey-harvest lasting three weeks longer than in 1884 gave me 111½ lbs., 107½ lbs., and 104 lbs. respectively of extracted honey. I also re-queened one stock successfully in the same manner last year, and intend to follow the same plan again this year.—Geo. Franklin.

PACKING SECTIONS FOR TRAVELLING.

[281.] A query was inserted some time back, but I do not remember to have seen any reply to it. Perhaps a few words would not be out of place, although the season for despatching small parcels of section honey has gone past for the present. I sent a rather large consignment to one of the shows in the South of England last year, and did not get a single section damaged, although when I went to the railway station for it I found it in divers positions. One large case containing eight dozen was on its end, another bottom upwards, another on its side, while two travelling crates containing three dozen each, with glass sides, or rather showing the glazed sections, was deposited out of harm's way. I told my man to bring his cart; and then to see the way the careful servant of the railway company began to turn over and over again the large case. I said, 'Gently, friend, look at the label please.' 'I hadn't noticed that this was honey,' he said, 'but I could see that was across there. I put that out of the way,' referring to the glazed sections in the open-sided crates. Now every one of the cases had conspicuous labels on the top with the direction, 'This side up,' &c., but after all the pitching and tumbling about, as I said before, not a single section was damaged on either journey. How was it packed? The sections were tied up in dozens, then some straw or hay or shavings were put at bottom, then the sections of honey each glazed and tied in parcels, then the packing stuffed in tightly all round and over the top, thus forming an envelope of packing that breaks all the jars and knocks on the railway; and notwithstanding the advantages that may accrue from the visibility of the honey in the ordinary travelling crates, I prefer a common starch box or anything that will take the quantity required with some packing all round. In closing I may say I have sent honey in the comb to *India*, and it has reached its destination safely packed as above, only using sifted cork-dust instead of other packing.—Woodleigh.

SPRING STIMULATION AND THE BLIGH COMPETITION.

[282.] I cannot but think that a great deal of good might be done through your valuable *Journal* by experts and practical bee-keepers giving their experience on the merits and demerits of the system of spring stimulation. Mr. Lingen Seager, the Rector of Buckland-Sedleigh, and Mr. W. N. Griffin, have written strongly on the subject, but there must be a large number of experienced bee-keepers who could enlighten us on so important a question.

I was much struck on reading through the diaries of the Bligh Competitors (as given in last October *Journal*) to find that Mr. T. Owen, who did so grandly and carried off the first prize, and left off with five good stocks, makes no mention whatever of having fed or stimulated his bees during any part of the competition. Was his success in any way attributable to his not doing so, or was it merely an omission on his part to record the fact in his diary? All the other competitors who took prizes make mention of having adopted the system of feeding. Mr. W. Woodley, who did well, and took second prize, states that he fed slowly from the 11th April to the 25th May. Mr. Seabrook, who took third

honours, states that he fed from one hole from 28th February to 3rd May. Each of the other competitors fed for longer or shorter periods, all apparently with good results. I do not wish to bring about a controversy between the competitors on this question, but to obtain the opinion of other experienced bee-keepers on the utility of spring stimulation.—W. A. Warrilow, *Chippenham.*

DO BEES HEAR?—A CRUCIAL EXPERIMENT.

[283.] It has struck me that a crucial experiment may be tried in the coming season as to the powers of hearing possessed by bees. It is well known that if hived bees are brought near to a moping batch and if the bees in the hive set up the wonted hum of contentment, the batch of listless bees will suddenly change their demeanour and turning towards the hive, some fanning, will all run gladly towards and into the entrance of the hive. Now, in such a case, it can never be proved that smell is not a coefficient.

I propose to store up the contented hum of a hived lot by means of a phonograph, and to experiment with this stored-up sound, subsequently, upon a discontented batch of bees. The experiment might be made by any or all bee-masters who either possess or can borrow a phonograph.—Fred. Stock, *Burton Bank, Mill Hill, N.W.*

BEE TREES.

[284.] I noticed in a recent number of your valuable and interesting *Journal* some comment on the above subject. I have been fortunate enough to come across several of these natural 'hives,' and they are, I think, more common than most people think. I have cut out three in one locality, viz., Broadwas, near Worcester; and among others I have seen, one was within a quarter of a mile of my own apiary, in the stem of a broken and dead poplar, quite twenty feet from the ground. Bees in this wild state sometimes grow immensely rich in store; one that I cut out at Broadwas, assisted by my friend who keeps the Post Office there (Mr. Wormington), who is just beginning bee-keeping, was in the stem of a willow-tree growing almost in the hedge. The bees had an entrance right into the hedge, which shows how diligently they search for these homes. No doubt a well-organized reconnoitre is made by a large number of bees, told off for the service, as I cannot think they meet with these places by chance. The stem of the tree was about thirty inches in diameter, and we bored with a three-inch American augur several holes, cutting them with a chisel into one large opening. We cut through about three inches of green wood, and then about as much more of decayed, soft wood, making a very warm lining to the hive, which was a sight to please the eye of an enthusiast. The combs were about thirty-six inches long, fifteen inches wide, and two inches thick, the lower ends to about nine or ten inches had been used for brood, the other was perfectly clear virgin honey, 80 pounds, which we divided with the owner of the field. The combs were beautifully straight except at the lower part, where I found a mass of comb all and every shape, evidently the soft wood had given way when the first attempt was made to build their comb at the top, and from the appearance, I should say the combs were afterwards built upwards. The combs were a light straw colour, so that, I think, they were a swarm of the previous year only. We inverted a cheese-box near the tree, and shook off all the bees we could in front of it, and left them at mid-day amidst thousands of robbers, including wasps and hornets; and at night we found all the bees in the box and the tree deserted. Seven pounds nett we estimated the weight of the bees, but I am sorry to say I have just heard they have succumbed to the cold, and probably want of food. This district seems very rich in honey, all the hives I drove were simply full; and one lady told me her bees always swarm early in May, and this on the 'let-alone principle.' Perhaps this accounts for there being so many wild bees there. I have heard of others there, and a gentleman told me a short time since, that near a village in Cheshire, among some very large trees, there were scores of these 'wild swarms,' and had been for years.—C. H. Bickley, *3 Fern Villas, Green Lane, Smallheath, Birmingham.*

QUEEN ODOUR.

[285.] In the issue of the 11th February, 1886, the following paragraph appears in Mr. Benton's method of queen introducing: 'The strange queen is caged long enough to acquire the peculiar odour of the hive to which she is to be given.' I think, Mr. Editor, that the foregoing is somewhat at variance with the general opinion on this subject; at least, if I am wrong I shall be very pleased to be corrected in a following issue of the *Journal.*

A very interesting discussion took place at the Conversazione of the B.B.K.A., held on 20th January, but the full report was, no doubt, omitted for want of space, in which the question of the queen's peculiar scent was debated; and it was, I think, unanimously agreed that the bees ascertain the presence or absence of their queen by a strong odour emitted from her, to which the bees are accustomed. Mr. Baldwin said, and was corroborated by other members present, that the reason of bees swarming on a certain branch of a tree or bush consecutively in a season was in consequence of the smell left there by a previous queen; but that the preference for that particular alighting spot only lasted for one season, the odour being dispelled by the ensuing winter. He also went on to say that if a queen be taken out of a hive and handled for some length of time, she will lose her scent, and if returned to her hive her life will in consequence be endangered. Mr. Hooker suggested that the reason was, that the queen would lose the odour of the hive from which she was taken, in which opinion he appears to be supported by Mr. Benton in the paragraph above quoted.

Now, if it is a fact that the queen, when inserted in a new hive, loses her former and obtains a new odour, it would, to a great extent, upset the fact that the bees in a hive are aware of the existence or not of the queen by the power of scent; for if it were the peculiar odour of the hive, and not of the queen, that is the important point, then how is it possible that the loss of the queen is ascertained by the faculty of scent?—Walter G. Campbell, *Hornefield, Tottenham.*

PLANTING FOR BEES.

[286.] In a previous issue of the *B. B. J.* in the spring of last year, I promised to make known to bee-keepers through the *Journal*, my experience and the results of some 250 different kinds of seeds, the merits of which I was then testing with a view of bringing before the notice of bee-keepers generally such kinds of bee-forage as might be worth profitable cultivation. As a large percentage of the seeds I sowed were annuals, I regret to say that owing to the unfavourable dry season, most of them perished. Some perennials that were of a harder nature managed to survive; but, of course, it will require another season before they can be tested. I shall not be daunted by this failure, as I am convinced that there is still a number of good bee-plants to be discovered and added to the already valuable list familiar to most bee-keepers.

The raising of plants from seeds is always an interesting occupation, but much more so when there is some other object in view than the mere endeavour to obtain certain plants. Two years ago I saved a few stock seeds, as I am very fond of that favourite flower for

the garden. When the seeds began to make their appearance I was surprised to find among the young stocks a plant quite different from any of which I have ever seen, and which I have since asked the opinion of two gardeners, and neither could inform me what the plant was, as they could not remember having seen a plant like it before. I was very curious about this plant, and thought I would test its merits as a bee-plant. It came into bloom early last May, being covered with millions of small yellow blooms, and continued to bloom on until cut down by a hard frost that came last September. The bees worked well upon it from the commencement of its blooming period until it was cut down by the frost alluded to, and in fact even after shrivelled up by the frost, the bees endeavoured to get something from it. The bees obtained nectar from it, but pollen was the chief thing sought after, and it was surprising to see what large pellets they could collect in a very short time. Whatever this plant may be, I claim for it to be one of the best pollen-producing plants ever brought before the notice of bee-keepers, and one that should be grown by every possessor of bees. And now that I am speaking of pollen plants, *Helianthus* (sunflower) should not be overlooked. When I say sunflower, I do not mean that old-fashioned single yellow-eyed variety, grown by almost everybody, but that grand double dark-eyed variety of recent cultivation known, I believe, as *H. globosus fistulus*. It bears grand double flowers of immense size, producing honey and a fine quantity of pollen very valuable for late breeding.

It is the collection of this late pollen and the storing of the same that enable the bees at this early part of the season to produce good batches of brood, which by a little stimulation can now be turned to good account.

The recent severe winter has proved the necessity for planting a good stock of early forage for our bees to work upon on the first opportunity. Large batches of snowdrops, crocus, and arabis, in close vicinity to the hives at this part of the season, are very valuable to the bees, and I propose to give to bee-keepers very shortly my views on the subject of planting forbees.—W. Hollins, *Tillington Avenue, Stafford.*

[Will our correspondent, when he has the opportunity, take the trouble to forward us a specimen of the nameless plant, and we will endeavour to procure its name. Being as valuable as he states, it is desirable that it should be generally known.—Ed.]

UPWARD VENTILATION. (35.)

[287.] Before long, I presume, we shall learn the result of the experiment by the author of 'Useful Hints,'* on wintering bees without upward ventilation. The weather this winter has been such as to give the experiment a fair trial, which will make the result very interesting.

In ordinary winter weather, I have no doubt that bees would do just as well, if not better, without upward ventilation, but can they stand a sudden rise of temperature succeeding continued cold?

I believe it is generally agreed that bees can withstand cold far better than damp, and upon this is based the theory of upward ventilation.

The bees clustering together in cold weather leave the ends of the frames and sides of the hive comparatively cold, and when there is a sudden rise in temperature, the warm moist air condenses on these cold surfaces—as on a window in frosty weather. Upward ventilation is useful in evaporating this moisture. It is a cure for dampness in a hive, and the question is, can we do without it? Without upward ventilation the warm air outside would not have such free access to the hive. Moreover, the hive would not be so cold, and I think that with a strong colony crowded on a small number of frames, we should without upward ventilation entirely, or almost entirely, prevent the condensation of moisture and prevention is better than cure.

I should, myself, have tried wintering this season without upward ventilation, but I was deterred by the account in Root's *A B C* book (edition, 1883) of his experiments with chaff packing, the success of which was most striking, nevertheless that the cold seems to have been more intense as well as more prolonged than in England. He even speaks of a 'zero temperature.' Root's experience would be almost conclusive, but for a fact that he does not appear to have previously reduced the number of frames for wintering, and his success may be due to the reduction of the number of frames, and not to the upward ventilation, and, perhaps, he did not before use sufficiently warm coverings.

It must be borne in mind with regard to upward ventilation, that the lower the temperature in the hive as compared with that outside, the less will be the upward ventilation, so that the loss of heat is greatest when it is *least* wanted. Also, that when the warm air passes upwards, the heat is to a very great extent retained by the quilts or chaff packing, and by radiation returned to the hive—as in the case of a fire at the back of a grate, or blankets on a bed. It is quite possible also, that on a sudden rise of temperature the air in the hive may be colder than the outside air, and in that case a *downward* current of air would pass through the quilts or chaff packing, but this would be so temporary that it would, I fancy, make no practical difference.

Again, if we do away with upward ventilation a certain quantity of heated air could escape through the entrance, being replaced by cold air from outside, and the hive would be ventilated in that manner. Root noticed a bit of chaff blown out of the entrance of a hive as if impelled by a draught of wind, and this although the hive had upward ventilation. It will be observed that the opponents of upward ventilation advocate the enlargement of the entrance to summer width.

The mode of ventilation through the entrance is, I take it, as follows—Heated air ascends from the cluster, the air below taking its place, and drawing in cold air from the entrance. The heated air spreading along the top of the hive loses its temperature as it reaches its sides, and descending as it does so, escapes at the entrance, so that there is constantly a current of cold air passing in at the entrance, and a current of warmer air passing out. This would be more marked if the bees cluster towards one end of the frames, or if the sun shines on (and warms) one side of the hive, and it is possible that the cluster of bees moves so as to increase, or decrease, the ventilation as necessity may require. Ventilation through the entrance resembles the experiment described in the *Boy's Own Book* of burning a lighted candle under a bell jar with a small aperture at the top, and a piece of cardboard edge down in the aperture. The candle does not go out, as at one side of the card there is a down current of air, and at the other side an up current, thus preserving the necessary ventilation.

In one place in Root's book, he speaks of a current of warm air from the entrance of a hive melting the snow in front of it.

I cannot conclude without expressing my appreciation of Root's admirable article on ventilation in relation to damp. It is a subject on which there is a great deal of misconception.—F. L.

* See 'Useful Hints,' p. 136, 'Enamel Cloth.'

Bees and Drouth.—A singular circumstance is reported from a hot, dry valley in New South Wales. The previous year the drouth was of long duration, and the denizens of the apiaries suffered much from it. The next year the bees made provision against a similar emergency. They filled a number of the external cells in every hive with pure water instead of honey. It is thought that the instinct of the little creatures led them to anticipate a hot summer.

Reviews.

Geschichte der Bienenzucht. By J. G. Beszler, Ludwigsburg, Germany.—This work which consists of 270 pages of ably written matter, is a history of bee-keeping from the earliest to the present times. It does not pretend in any way to be a practical book on bee-keeping, but it is hoped that there may be a great many whose sole object is not one of £ *s. d.*, who may desire to know besides the practical part of the business something about the origin and history of its development. For such this book is written, and we promise them if they will only read it that they will not be disappointed. The author, in a very happy manner, describes the mythical stories of ancient times which are in any way connected with bees. The bee has been known to exist in Egypt for upwards of 4000 years, because it is found on hieroglyphics dating before this period, and has always been looked upon by the Egyptians as a symbol of monarchy. Amongst the Jews both bees and honey are repeatedly referred to, and all the texts from the Bible relating to them are here collected. Then there is their history in Arabia, India, and Assyria, amongst the Greeks and Romans, and other people, up to the present time. A chapter is devoted to the various superstitions connected with them. Also one on bees and poetry collected from various European poets, and even the proverbs are not forgotten. There are a number of pages devoted to anecdotes connected with the employment of bees in war and self-defence. Being a German book it is natural that most of it is devoted to the history of bee-keeping connected with Germany and the German States, although casual allusion is made to other countries. All the laws relating to the ownership in bees are set out in detail, and a number of statistics given which are most interesting, and to which we shall occasionally refer in our *Journal*. The countries to which allusion is made besides Germany are Servia, Poland, Austria, Hungary, Switzerland, Italy, and America: we suppose that according to the author's judgment bee-keeping is not of sufficient importance in England, as it is nowhere mentioned. One very interesting feature is the photograph containing the portraits in miniature of 109 of the principal European bee-keepers,—Dzierzon occupying the centre place and being surrounded by others whose names are equally well known. There are also over 180 short biographical sketches of well-known living and deceased Continental bee-keepers; and amongst them are found those of Berlepsch, Bertrand, Blatt, Boutlerof, Dathé, Dennler, Dr. Dönhoff, Dzierzon, Gravenhorst, Huber, Hilbert, Hruschka, Jacob, Jeker, Langstroth, Dr. Leuckart, Dr. Mullenhof, Dr. de Planta, Dr. Pollmann, Dr. Preuss, Schönfeld, Schultz, Siebold, Vogel, and Zwilling. We heartily recommend the book to those of our readers who know the German language, feeling sure that they will derive much interesting information respecting the history of bee-keeping from its perusal.

We have received from Mr. T. G. Newman, the editor of the *American Bee Journal*, a pamphlet entitled *Brief History of the North American Bee-keepers' Society*, in which twelve pages are devoted to the first fifteen conventions, and the remainder to a reprint from the *American Bee Journal* of the report of the Proceedings of the last Convention held at Detroit on December 8th, 1885.

We find the North American Bee Association was founded on the 21st December, 1870, and the Rev. L. L. Langstroth was elected its first president. About the same time the American Bee-keepers' Association was also started, with Mr. Langstroth as president. Both these Associations were dissolved the following year, and a new Association formed called the 'North American Bee-keepers' Society.' A digest of its proceedings is given, and from it we find that this Society has also had its dark days, and at the Convention at Toledo in 1875 'none of its officers were present except the Treasurer, and after much discussion the general opinion was that the Society hold one more meeting at the Centennial Exhibition in Philadelphia and cease to exist.' Gloomy, indeed, is the history of the Society about this time, and very little is said about it, but it was not dissolved. The Convention was held, although the attendance was small, but, little by little, more interest was taken in it, until we find in 1885 the Society records upwards of 100 members.

Although we have nothing to learn from the Americans as to Associations or shows, our own organizations of both these being far in advance of anything of the sort in America, yet we should be glad if our British bee-keepers would emulate the spirit of communicativeness displayed by American bee-keepers, and like them impart to us at the quarterly conversaziones of the British Bee-keepers' Association more of their experiences. We are sorry that we cannot agree with Mr. Newman who, in his prefatory remarks, points out that there is an opening in England and the Continent of Europe for American honey. There are evidences clear and distinct that this importation has already been overdone. We do not think it will pay to send over American honey; and although our importation of foreign honey is still very great it is chiefly confined to the inferior and cheaper qualities, which find their way also in equally large quantities into the United States, and after paying a duty of twenty cents per gallon are even sold at a lower price than American honey.

Mr. A. Todd, in speaking of this honey in the *American Apiculturist*, says, 'I know factories using hundreds of barrels of honey per annum, and they won't use American honey because the price has not been right as compared with the equivalent saccharine matter and flavouring power obtained from the foreign article.' We ourselves know that the importers of American honey have, even during the last year, not been so successful in disposing of it, and that still a large quantity is lying unsold in docks. This state of things has been brought about by British bee-keepers being able to supply the demand, and at prices which, while being sufficiently remunerative to themselves, are practically excluding American honey. Mr. Newman is also, we think, misleading when he quotes the amount of honey imported in Hamburg from 1877 to 1880 (taken from a German paper) without stating the importations since that date. The information would not be palatable, for we find by Messrs. Schacht & Lerneke's circular that exports to Europe during the last nine months of 1885 were very small, and since 1st of July last, as far as regards Germany, entirely ceased, owing, it is stated, to an alteration in the tariff. But we could point to the fact there are now more bee-keepers engaged in the production of honey, and that with improved appliances and more economical methods it is rapidly becoming a staple product all over Europe. From about 200 the number of members of the British Bee-keepers' Association and its affiliated County Associations has in less than twelve years risen to upwards of 10,000; so we again counsel foreign importers to 'pause' before they send us further consignments of their superabundant honey.

These facts should be placed before American bee-keepers, and they should not be buoyed up with the false hope of a European market which, as the number of bee-keepers increases, must, sooner or later, be closed to them.

Apidæ Europææ. By Dr. H. L. Otto Schmiedeknecht.—We wish to call our readers' attention to the above work, which is at the present moment coming out

in parts. It is a history and description of every known genus, species, and variety of bee in Europe. It is the most exhaustive and complete work we know of on the subject. To give an idea of the extent of the work, we will mention that in the genus Nomada no less than ninety-six species are described; there are six plates of engravings containing sixty-one figures, the description occupying 249 pages (imperial 8vo.); genus, Andrena occupies 439 pages, and there are 186 species described. The first volume is complete in 866 pages, and describes the genera Nomada, Bombus, Psithyrus and Andrena. The work comes out quarterly, and the annual subscription is 14 marks. As a book of reference it is invaluable, and the excellent illustrations are a great help in determining species. Eleven parts have already appeared.

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[203.] *Croaking Noise in Hive.*—Having kept bees twenty years or more I don't remember ever hearing the croaking noise before last year, and several times in the same hive. It sounded too hoarse to be a queen piping, which makes me think it might be a drone.—J. Wilson.

[262.] *Painting Hives, &c.* (W. G.)—(1.) The plan proposed would answer very well, but instead of makeshift hives I would recommend new hives of the same kind you now have in use (that is, if you wish to increase your number of stocks) and paint them the desired colour, and transfer the combs into them as quickly as possible, at same time leaving out the outside combs, if only for a day or two, and so crowd the bees so that they will the sooner raise the heat of hive to proper temperature. You need not fear of losing the queen if you do the work carefully and keep both hives close together during the operation of moving the combs, when what few bees remain in the hive may be allowed to fly home at their leisure, or be gently brushed up with a feather after hive has been removed a little distance. Then proceed with the cleaning of the insides, which should be well scraped with a spatula to remove all dirt and propolis, and well scrubbed out with a good stiff brush, carbolic soap and boiling hot water; then rinsed with clean cold water, allowed to drain, place in sun or before a fire to dry, well sandpaper the outsides, and stop up all nail-holes, sun-cracks, &c., with putty, and give two coats of paint, when they may be taken (when dry) to the next four and exchanged, and so on until all twelve have been finished, this will save you the trouble of transferring the same hives twice, and leave you four hives, which may be cleaned, painted, and prepared ready for your swarms. In case you do not wish to increase your number of stocks, leave the 'makeshift' hives in the place you first put them until all the hives have been attended to, when the last four finished will take their places. I have been doing my hives in the above manner, and after having given them two coats of paint I stain them with a stain made of burnt sienna three parts and yellow ochre one part, well ground in water or beer, which should be well rubbed on with a stiff brush and laid on same way as grain of wood; then, with a 'grainer's softener,' or painter's duster brush, lightly figure it over, then, when dry, give one or two coats of varnish. This is a little more expensive in the first place, but when the same operation of cleaning is required next year the hives will only require well washing all dirt off outside and revarnishing. I have several hives now in use that I have not painted these last ten years, but have regularly varnished them. I never find the water running all over insides of roofs. (2.) Absence of brood and eggs at this season of the year is almost a certain sign of queenlessness, but if the hive is well filled with bees do not trouble about finding the queen amongst them, but go on with your transferring and examine them again in four or five days to see if any eggs or brood is in the cells, when you may be sure the queen is all right. It should not be much difficulty to find a queen this time of year as I have seen no drones as yet, which sometimes are apt to deceive a novice, but any one owning twelve hives should make a point of being able to find a queen.—W. Silver.

[272.] *Cleaning Extractor.* (J. I. S.)—If your extractor is only slightly rusty it will not affect the honey, providing you draw it off at once after extracting, and thoroughly wash the extractor both before and after using. There is no paint or varnish I know of that is odourless; honey will become flavoured directly if placed in contact with such.—W. B. Webster.

[272.] *Cleaning Extractor.*—I should think 'J. I. S.' had better get his extractor retinned. I don't think paint will prove a satisfactory solution of his difficulty.—Woodleigh.

[273.] *Dividers.* (F. McK.)—Opinions are very varied upon this subject. Wood dividers are cheaper than metal, but they easily break and frequently warp, so spoiling the shape of the sections; I have given them up, and now only use plain zinc of the thinnest description and find they are as near perfect as possible. The arrangement of some entirely depends upon the description of rack used; I use long ones, right across the three rows of sections; in dividable racks they must be less than height of one section, but same width, having legs to rest on side bars in order to give bee space underneath.—W. B. Webster.

[273.] I prefer zinc, as it does not rust; is unbreakable and thinner than any other suitable substance cut out strip, leaving two ends as feet to rest on, strips giving bee room between tops of frames and bottom of sections.—Woodleigh.

[274.] *Capacity of Super.* (R. Cairns.)—A super having a capacity of 1176 inches with six combs contained 43 lbs. of honey, comb included; yours in rough figures would contain about 40 lbs.—W. B. Webster.

[274.] From 30 to 36 lbs.—Woodleigh.

[275.] *Lonely Queen.*—'O. D.' does not tell us if there was any brood or eggs in the hive in which the queen was left 'monarch of all she surveyed' (in the dark). It is probable she may have been a late queen, as 'O. D.' says she was a young one, and not fecundated, and in this case it is probable that it was a survival of the fittest—the condition of the hive points to a small number of consumers during the winter.—Woodleigh.

[259.] *Erratum.*—*For* troy *read* apothecaries.—W. B. W.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[288.] *Sweetening Hives.*—Can any reader inform me what is best to sweeten bee hives with that have been destroyed by mice? Most of the frames are full of comb.—G. C.

[289.] *Extra Queens.*—In uniting to make up stocks for wintering does it not seem a pity to destroy the extra queens, some of which would be so useful, and in their prime the next season? Could they be successfully preserved indoors with a few attendants, or by any other means?—Honeysuckle.

[290.] *Swarming and Non-swarming.*—Would the honey-yield from one stock in spring, covering eight frames and allowed to swarm once, be equal to that of two stocks in spring covering four frames each, and not allowed to swarm?—Honeysuckle.

[291.] *Raising Queens.*—Can good queens be *started* and raised in nuclei if we take the precaution to give them but little brood, and that from our best queens, and perhaps limiting the number of cells they start?—Honeysuckle.

Echoes from the Hives.

North Notts.—March 19th and a few following days were grand, since when weather has been cold and wet. My stocks in good condition; better, if anything, than this time last year. A dozen hives through winter under enamel quilts have come through better than six under porous; as

many bees or more, and combs drier. Most of them have bees on from eight to ten frames, cold as it is. Several have brood in four or five frames. No natural food outside yet.—FRIAR TUCK.

Alfriston, Sussex, April 12th.—The weather to-day has been lovely and warm; bees busy gathering pollen from the elms and buttercup. Bees have been at work on gooseberries to-day, but I don't think there is much honey yet.—YOUNG BEE-KEEPER.

Hexham, April 14th.—I commenced the year 1885 with six stocks, five bar-frame and one straw hive, and as I did not want much increase, I worked three, for honey alone, and let the other three swarm. The amount of honey I got exceeded my expectations very much, but I must say that the weather was almost all I could desire. We have two large nurseries and lots of market gardens here; hawthorn, sycamore, and lime trees in abundance; this is, in fact, a beautifully wooded district, being a clean, healthy market town. We have a good few bee-keepers here, and I may say that a number of them are changing their skeps and box hives for bar frames, the chief complaint against frame-hives being their costliness, the extra weight and size being against them in taking them to the moors, which are about six miles from here, over very hilly and bad roads. As I am a carpenter I make nearly all my own hives, the frames of which hang parallel to entrance and hold fourteen standard frames; the hive body is double walled on each side; loose floor-boards, as I think they are more handy than nailed ones. All are made of the best pine, and well painted. Nos. 1, 2, and 4 I worked for honey alone; No. 3, 5, and 9 for swarms as well. No. 1 swarmed twice, but I threw them both back. The first weighed 6 lbs. and the second 9½ lbs.; I never saw such a large swarm. Nos. 3, 5, and 9 all swarmed, which were put into bar-frame hives. The following table shows how far behind the blacks are in comparison with hybrids and Ligurians; although the first year I had the Ligurians I was rather disappointed in them, as they did not do very much, but each succeeding year they have done better. I now give you the results:—

	Clover. lbs.	Heather. lbs.	Total. lbs.
No. 1. Ligurians	90	15	105
,, 2. Blacks	28	9	37
,, 3. Hybrids	24	21	45
,, 4. Blacks	30	8	38
,, 5. ,, ...	29	7	36
,, 6. Swarm from Blacks ...	18	—	18
,, 7. Swarm from Hybrids ...	49	—	49
,, 8. ,, ,, Blacks ...	29	—	29
,, 9. Straw Skep	—	—	—
	297	60	357

The above is all comb honey. I use only the 4¼ × 4¼ size sections. I also took 40 lbs. of heather honey from the bottom frames, which sold for 1*s.* 3*d.* per lb., and left plenty to winter on. The section honey I sold as follows:—Clover, from 1*s.* to 1*s.* 4*d.* per lb., and the heather at 2*s.*—T. HEDLEY, *Woodbine House.*

South Cornwall, April 17th.—We have had but few days when anything could be done with bees. A fortnight ago I examined four lots and found them in good condition, and on Thursday last I looked through five or six frame-hives and one skep. In the case of the former I found brood on (generally) three frames, though in one instance on two only, and bees very numerous with abundant supplies of food. In fact, I have removed two well-filled frames of honey. I have heard of only one loss among my neighbours, and I fancy this lot was left weak. The queen and the last score of bees died last week. Other stocks are reported strong, but the wind is blowing from the east again, and everything is at a standstill. We are, however, placing great reliance on a statement made a month ago in *B. B. J.* that the fine weather 'must come!'—C. R. S.

Norwich, April 18.—We are having very cold stormy weather here; bees are prevented from even taking an airing. Willow has and is flowering, but very little pollen has been gathered on account of the adverse weather. Myrobella plum, whin, red flowering currant, Iberis aubrietia and wallflowers, are flowering profusely, and not a bee can get ont to visit this valuable forage.—HENRY DOBBIE.

Ballyskeagh, Dummurry, April 3rd.—We are having bad bee weather here just now; high winds, with heavy, cold showers, and temperature very low. An occasional fine day allows bees to get flying, when they are very busy on crocuses and inverted skep, with shavings and pea-meal. Hope to send you a note soon of state of various apiaries in North of Ireland, and how bees have wintered. This would be premature just now, as winter does not seem away yet.—P. McH.

Killarney, 13th April.—This is the first mild day that has come since the beginning of the year. Though still the mountains are covered down to their base, what between snow, sleet, cold easterly winds, and rain, my bees have not been out more than six or seven days since the 1st of February. I got a fine hour a few days ago to have a peep at them, and found brood in different stages in all, and also discovered stores running dangerously short in three hives; yet the weather has been such since then I have not been able to do anything for them, lest I may do more harm than good. To-day, however, I begin stimulating in all my hives, though it is rather late, as the honey flow begins here about the middle of May, with white clover, and continuous until the 1st of July, when the bees finish off the surplus storing of the hives. Many thanks for the valuable 'tips' you give us from week to week under the head of 'Useful Hints' in *Bee Journal.*—MAUGERTON.

Minorca, April 4th.—My big hive has for some days been working in the sections. I have now added a second case of 21 sections to it, and think I shall have to add 21 more within a week, as it is very crowded on eight frames, nearly all brood; it had 12 frames, but I crowded it on to 8. Its first 21 sections and excluder behind are more than half finished. We generally manage our hives without smoke or gloves; bees very gentle.—F. C. ANDREW.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of persons interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

J. H. JENKINS.—*Doubling.*—You can if you like do as you propose, and put the hive of empty combs or foundation at the bottom. If the bees are strong and there is plenty of brood you will not find a whole box too much. You can also work your eighteen and twenty frame hives in the same way, only using two storeys, but in this case, when the whole of the twenty frames are occupied, we would only give ten above to begin with and add the other frames as they are needed on either side.

T. HILL, JUN.—1. *Simmins' Original Non-swarming System* is published by S. Simmins, Rottingdean, near Brighton. It may be procured from most dealers in bee-appliances. You will find our review of it in Number for April 15.—2. We may arrive at the development in the *Bee Journal* suggested at some future time.

W. H. R.—*Transferring.*—The combs in transferring had evidently not been carefully tied into the frames; they gradually fell from the top bar. They require to be cut and trimmed so that they should fit into the frame. If not deep enough to reach the bottom bar place a lath beneath it and wedge up with corks. If this is done properly the bees, if fed a little, will repair the combs, and in two days the tapes may be removed.

R. L. NEWMAN.—*Wax-moth.*—The maggots seen are the larvæ of the wax-moth (*Galleria cereana*). Cleanliness and prompt destruction of every moth and larva will keep them in check. The most efficient safeguards are, however, strong stocks and Ligurian bees.

P. KEENE and E. TULLEY.—Same reply as preceding.

E. J. BROOKE.—*Bacillus depilis (Gaytoni).*—Your bees are evidently suffering from the above disease, which was formerly known by the name of 'dropsy.' It has been prevalent in America of late, where it is considered a new disease. The young bees are affected chiefly, but in all probability the queen is infested by the bacilli. We refer you to the *British Bee Journal* of December 1st,

1885, 'Useful Hints,' p. 383, where the disease is fully described, together with the remedy, viz., phenol, as prescribed by Mr. Cheshire. We believe it is not contagious.

Ligustica.—1. *Pea-flour.*—You cannot induce bees to take more or less pea-flour than suits their taste, or their needs. Supply plenty, and they will take all they require. Probably at this advanced season they will not take any, since pollen in abundance is to be obtained from natural sources, which the bees much prefer. 2. *Mating.*—An Italian queen has been known to mate with an English drone, when the two hives were seven miles distant. Practically about three miles distance will be sufficient to ensure good results.

A. T.—The British Bee-keepers' Association have not adopted a standard hive, though they have a standard frame, the outside dimensions of which are fourteen inches long by eight and a half deep, the top bar being seventeen inches long.

R. K.—*Nadiring.*—Nadiring is the opposite of supering. A nadir is an addition to a hive below the floor-board. Some bee-keepers obtain very good results from this method of management. An eke is an addition to the walls of a skep above the floor-board.

T. Harper.—The oil-cloth you have forwarded will be found suitable.

Beeswing.—The honey advertised is that alluded to by us in our editorial, 'What Next?' of last week. It will be desirable to have its purity tested.

C. Hug.—*Uniting.*—Drive the colonies out of both skeps. Remove the oldest queen, and shake down both lots of bees together on a sheet in front of that skep which contains most sealed brood. The skep must be wedged up about three inches in front, and the bees will run in quietly and unite without any fighting. The brood in the deserted skep should be cut out and placed over the feed-hole of the other skep, and covered by a small cap (super). The bees will hatch out the brood, and there will be no loss. Any sealed honey may also be placed with the brood. When the brood is hatched—say in ten or twelve days—feed with syrup. You may thus obtain a very good swarm from the skep, and twenty-one days afterwards may transfer the parent stock to a frame-hive. We advise you to keep the frame-hives as they are for the present, feeding them when necessary, and—say in a month's time—unite the weakest colonies to the stronger ones before putting on sections or doubling for extracted honey. By following this plan you may obtain half-a-dozen strong colonies, any two of which would collect more honey than the ten together if left as they are. For doubling use a ten-frame standard; for sections a twelve-frame standard. Metal ends we advise.

Buzz.—*Old Combs, Dry Sugar, &c.*—(1.) You may safely use the old combs for other colonies, and for extracting when filled. (2.) Dry them before the fire and brush off any mould. Spray them slightly with salicylic acid solution, and hang them in a dry room until required for use. (3.) Dry sugar poured in behind a dummy, raised a little from the floor-board, is a very undesirable method of feeding bees. The sugar would deliquesce at the bottom of the hive and cause a dreadful mess. Syrup-feeding from a bottle-feeder is far preferable, occupies less time, and is more advantageous to the bees, being less expensive in the end. (4.) The storeys required by a strong colony during the season will depend entirely upon the honey yield. In an average season and country, if each storey contains fifteen Standard frames, one will be quite sufficient. Ten frames for each storey will be found better than fifteen. (5.) Enamel cloth, with metal binding, of a suitable texture, and very easy to manipulate, is sold by most dealers at from 6*d.* to 1*s.* each quilt, and is advertised in our columns.

E. K. Elliott.—*Abnormal Egg-laying.*—You do not give sufficient details of the colony to enable us to decide the cause of the deposition of several eggs in a cell. The age of the queen, the population of the hive, and the size of brood-nest, are important elements in the question. Judging, however, from your statement, we think the brood-nest is too circumscribed, that is to say, a paucity of cells for receiving eggs causes a prolific queen to deposit several in one cell. Or a reduced population able to cover a small amount of brood only may be the cause. In the former case—which may arise from too much sealed honey, or from combs clogged with pollen—the remedy is to insert an empty comb of worker cells in the brood-nest, and to uncap the honey cells on both sides of the nest, removing any comb clogged with old and dried pollen. If the population is small, the addition of a weak colony, or of a brood-comb or two, with adhering bees, would be found of great advantage. At all events, we advise you not to condemn the queen, since the fault, in all probability, has arisen from her fecundity.

Young Bee-keeper.—*Excluder Zinc.*—We do not advocate the use of excluder zinc when working sections, either on bar-frames or skeps.

J. C.—Be pleased to put yourself in communication with E. H. Bellairs, Esq., Wingfield, Christchurch, Hon. Sec. of the Hampshire and Isle of Wight B. K. A., who will be happy to inform you if there are any experts in your locality.

A Young Beginner Willing to Learn.—*Section and Extracted Honey.*—There is no doubt that if so disposed you can work for both section and extracted honey. The plan you propose is quite feasible. The sectional supers you mention, in consequence of the cheapness of American sections, are not so much in vogue as in former years. But still they are great favourites with many bee-keepers, and will serve your purpose.

Mellor.—*Bees refusing Syrup.*—If your bees have refused to accept your syrup you may rest assured that you have made some mistake in its manufacture,—possibly in compounding it; the water or the sugar may have been bad, or it may have been burnt. Somehow their instinct has told them it was unwholesome. It being your first attempt, we can only say, 'Try, try again.'

Sussex and H. C.—Queries forwarded to the writer.

A. L. Platt.—We are pleased to hear that your stock is now progressing satisfactorily.

E. C. Kerr.—The bees are infected, but since they did not reach me alive it is impossible to pronounce dogmatically upon the case.—F. C.

E. W. P.—*Drone-breeding Queen.*—The drone-breeder I do not think was bred last year in the sense you intend it. She was raised (the other queen being probably lost) too late to mate, and hence the difficulty; certainly, she had never mated. You may find a cut-down queen-cell in the hive.—F. C.

F. G.—*Bees diseased.*—The bees reached me in good condition. I find the muscles of the thorax loaded with small bacilli in dense patches. The bacillus is about the same size as Gaytoni, but is differently clustered and seems to have a different effect upon the bees. The case, I believe, to be new in character. The history of the stock would be very useful if we succeed in cultivating this bacillus. I am making the attempt both at home and in conjunction with Dr. Crookshank. Should the stock not have a chance of pulling through, so that it becomes valueless, I should esteem the queen alive as a great favour: as she would, if placed in a nucleus, give me an opportunity of tracing the case.—F. C.

H. J. L.—*Transferring and Moving fifteen yards.*—Move your skep by one yard at a time until in the place where you wish the stock to remain, then transfer to your frame-hive. You can transfer on any warm day, but let the brood be separated from the bees as short a time as possible.

J. B. S.—1. *Transferring.*—See reply to 'H. J. L.' 2. Yes, if your skep is strong and you are careful not to chill any brood and to feed gently. 3. As Sir Roger de Coverley says, 'Much may be said on both sides,' but we prefer the frames parallel with the sides. 4. Golden Syrup is unsuitable for food. 5. *Vinegar.*—The small proportion of vinegar mixed in the syrup to prevent granulation, would not have an appreciably injurious effect on the bees, or on tin or zinc.

J. L.—*Enamelled Quilts.*—Many bee-keepers have tested the use of enamelled quilts during the winter, and have had good reason to be satisfied with them. The bees have been more comfortable and the hives drier than usual. The ventilation required has been obtained through the hive entrance. The firm mentioned being respectable dealers their goods may be depended on, though we have not had any experience with the article mentioned.

A. N. Montagu.—1. *Comb débris.*—The powder is pollen, excrementitious matter, wax debris, &c. The bees were most probably starved, and tore down the cells to get at the small amount of honey which is mixed with the pollen. As dead bees were found on the top of the hive under the cover, there must have been a hole, consequently loss of heat and greater consumption of food. The comb forwarded was old, but otherwise sound.—2. *Getting honey from roof of house.*—The best plan would be to place a frame-hive with some empty combs or foundation, and a frame or two of brood, and place this against the wall where the bees come out, making, of course, a hole in the hive to fit the hole in the wall, and thus compel all the bees to pass through the hive. Then, two or three days after, you must break open the ceiling, smoke the bees well, and remove them, the brood, and the honey, and put them in another hive. After you have cleared out all the bees, &c., shut up the back entrance of the hive by a piece of board or slate, and the bees that are flying will collect in the frame-hive, and can be removed at night and placed in your apiary. The hole must then be stopped up with plaster, cement, &c. If you wish any further directions, we shall be pleased to give them.

Ernest H.—*Races of Bees.*—There is every probability, as your apiary consists of various races of bees, that your queens will not mate with those of their own race; nor should this be regretted, as in-and-in breeding is objected to not only by the queens themselves, but by all bee-keepers. If you are anxious to keep your queens to drones of their own race we suggest that you should try what is called 'Kohler's process,' a description of which will be found in the *Bee Journal*, Vol. VII., p. 197.

R. J. Brook.—We should be obliged by your forwarding to us some of your bees which you describe as 'white and fluffy,' with a view to their more minute examination.

W. L., *Mortock.*—The combs and honey may be utilised for the benefit of your other stocks.

Miss Bolton.—1. *Tits.*—Not desiring to kill tomtits, which are so destructive to your bees, they may be prevented from doing mischief by fixing a piece of wire-netting a few inches about the hive entrance, so that the bird cannot pick up the bees from the floor-board. 2. Fumigate the hives with sulphur, wash with carbolic-acid solution or phenolated soap.

E. Davis.—*Carniolans.*—The address of the Austrian firm who advertise Carniolan queens is given in the advertisement. We are not in a position to say that we have a personal knowledge of the queens sent out by them, but as the advertisers are near the habitat of those bees, they have a favourable opportunity of vouching for their purity.

A Subscriber.—*Granulated Honey.*—Granulated honey can be given to the bees; it is desirable to melt it over a fire, keeping it a little below boiling point, and to thin it to the consisteney of feeding syrup by mixing with it hot water.

A Correspondent wishes to know if any bee-keeper has tried Locke's Perfection Feeder, and with what results.

Received, Leslie Tait's 'Supplementary Price List of Bee Hives and Apiarian Appliances for 1886.'

Menthol and Thymol.—I have only just noticed the questions of a 'Kentish Bee-keeper' addressed, I infer, to me (page 159). Cost, per ounce, of menthol is 1*s.* 3*d.*, of which put five grains to twenty ounces of syrup for uniting purposes. Thymol is 1*s.* 9*d.* per ounce. I always use spirits of wine. Being a dispenser I am in possession of all articles mentioned—the prices I quote are from a price list. If a 'Kentish Bee-keeper' will communicate with me and pay postage, I will give any other information required that I have found useful in regard to bee disinfection.—Thos. J. Davis, 12 *Palace Road, Bromley, Kent.*

We have received from Mr. H. Dobbie, of Cringleford, Norwich, a sample parcel of bee-forage seeds, and we may say that for quantity and quality those who may patronise him would have good reason to be satisfied with them. Mr. Dobbie appears to be determined to make this branch of bee-keeping a speciality, and is hunting up all plants which have any reputation as honey-secreting flowers with a view of testing their merits in this direction. We may also state that Mr. Dobbie has in the press a work on Bee-forage and cognate subjects, which will we trust fill up a void which has been long felt by bee-keepers.

Mr. Meadows, of Syston, near Leicester, writes:—'I notice in a review on *A New Era in Bee-keeping*, a few remarks on uncapping machines. Simmins' machine, of which I am the maker, can have the feature which you recommend attached, by which the combs are lowered in a very simple manner, and the whole arrangement is a complete success.'

In the illustrated catalogue received from Messrs. Aspinwall and Treadwell of New York we note, amongst other things they illustrate and describe, an extractor almost identical with the 'Rapid Honey Extractor,' which we introduced in 1875, and which has since that time been in extensive use in this country. Our extractor is, however, more compact, as we do without the centre rod, and in this way reduce the diameter of the can and simplify the machine. Our 'Rapid Extractor' has been illustrated in most books published since 1875, and has also appeared in all the principal dealers' catalogues. This is the machine which is ten years later brought out as something new, and for which Messrs. Aspinwall and Treadwell have obtained a patent.

Errata. Page 164, 3rd line from top, col. 2, *for* stocks *read* sheets. Page 165, line 33, col. 1, *for* last *read* best.

Show Announcements.

July 12-16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 94 Harleyford Road, London, S.E.

THE BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

DOUBLING FOR EXTRACTED AND COMB HONEY.

Those who do not desire to work entirely for either extracted or comb honey, but would like to have some of both, can do so on the doubling principle. In the first place, we must get all our colonies strong in the way already described on page 135, and as soon as the bees are ready for it, or the honey harvest commences, we put on a rack of sections. When these are full of bees, work begun in them, and honey coming in plentifully, we either put a hive filled with empty combs under the stock hive, or else put it on the top of this, and between it and the sections. If this is done at the right time swarming is entirely prevented, and the work in the sections continued without any interruption. When one-pound sections are used, three tiers of them can be worked at one time, or if the two-pound sections are preferred, only two tiers should be worked. When we wish to put on a second set of sections, these are placed under the first, and the third set is placed under the second. It will be found that these will give the bees ample room, but when the top sections are removed if we find that the honey harvest is not yet over, another whole set of sections can be given. We do not mind if they are not all completed, because the unfinished ones can have the honey extracted from them, and be put away for future use. At the close of the season when all sections are removed, the second storey will be found to contain a quantity of honey, and this can be extracted.

We may not get quite as many sections working on this plan as we might with only one body box, but we have this advantage that there is no swarming, and if the bees are properly managed there is no desire to swarm. We do not use excluder zinc or honey boards of any description, but place the sections right on to the top of the frames. The bees must also have plenty of room to go in and out freely, we therefore raise the hives in front by means of wedges, so that there are three sides which they can use for this purpose, and these at the height of the honey season will not be found too much. Outer cases, as described on page 148, to protect the hives from the heat of the sun, and allowing plenty of ventilation, should also be provided. Those who have hives on legs will find that they can easily work them in the way we managed the Alexandra hive, brought out by Mr. Hooker in 1879. It has two body boxes, and his method of working it was to put a rack of sections on the lower hive, and if the bees swarmed, to hive them in the upper hive, and place a board between the two. The sections were then put on the second storey, the swarming fever checked, then the communication between the two hives was opened, the parent and swarm reunited of themselves, formed one colony, and work in the supers went on briskly.

We worked our hive somewhat differently, and instead of allowing the stock to swarm, or running any risk of its doing so, as soon as the frames were full of brood and the hive full of bees, we put on our sections. All the frames were then removed from the lower body-box and put into the upper one, the lower box being filled with frames of empty comb and comb foundation, and the sections put on the top. We used no board or excluder-zinc between the boxes. As the brood was hatched out the cells became filled with honey, and as fast as the sections were completed they were removed and empty ones put in their places. This being a hive on legs, and the legs fixed to the lower body-box, it was impossible to work it otherwise than by managing in this way: we induced the bees to continue work uninterruptedly in the supers, and were also able to get extracted honey without any attempt on their part at swarming. Hives on legs can easily be worked in this way, and if the tops are hinged the hinges should be removed so as to allow them to be raised above the three tiers of supers. The floor-boards must be lowered to enlarge the entrance. We must again impress upon our readers the important fact that if they wish to work without swarming, they must have young and prolific queens, and the bees must have more than sufficient combs to store their honey in. We say more than sufficient because, when they are collecting honey rapidly and it is thin, they require plenty of room to distribute it before it is properly evaporated to seal over. If they have not this room they waste their time or are induced to swarm, therefore always give them plenty of room during the honey-flow in advance of their requirements.

'A BOOK ABOUT BEES.'

One of H. M.'s Inspectors of Schools has given the following valuable testimony to Mr. Jenyns' *Book about Bees* as a Reading-book for Schools. His cordial approval

of it is all the more valuable as he is not himself a bee-keeper:—

'A most interesting book. I think it is very well adapted for a school reading-book. To begin with, it is a subject that is in itself most interesting, as well as instructive: the necessary technicalities are put as simply and clearly as possible, and the book itself is full of interesting illustrations and stories which would catch a child's attention, and is written in an easy, readable style, which, for a child in one of our schools, is the happy mean between over-difficulty and over-simplicity; it is not hard enough to repel, but hard enough to add to the child's vocabulary and stock of ideas. Of course I am speaking of it simply from a *literary* point of view as a reading-book; and though I am, as a rule, opposed to books which deal throughout with one subject as being likely to weary a child, I should have no hesitation in approving this book if submitted to me for use in a school.'

USEFUL HINTS.

Up to the present time the weather still continues unfavourable to the bees, one day only having occurred on which they could work in force since our last. Monday, the 19th inst., was a brilliant, cloudless day, on which pollen was carried into the hives in great abundance, and weak and queenless colonies were conspicuous by their sluggishness. The really prosperous colonies, however, are becoming daily stronger, and we have ten frame-hives crowded with brood and bees in anticipation of the future in-gathering.

Swarming.—A couple of days hence the 'merry month' will again make its *entrée*, and—always weather permitting—swarms from over-crowded hives will soon issue forth, with the usual accompaniment on the cymbals of Mother Cybele,—at least in the benighted and remote county districts. And what more delightful sound on a balmy and bright May day than the merry hum of the circling swarm, with its attendant 'tinkling' performed by the good house-wife with her wondering bairns all around her? For ourselves we should almost as soon think of laying aside the all-absorbing pursuit of bee-keeping as of preventing natural swarming altogether in our apiary. For this great event—the issuing of swarms—all things must be in readiness, such as hives for the permanent holding of the swarms, skeps for receiving them from the bough, sheets for spreading underneath, a pail of water and a garden syringe, and a clean zinc pail into which to shake the swarm (when preferred to a skep). The pail is preferable when the swarm is at once to be set upon its future stand and in its permanent hive, which should be placed upon a sheet or board and wedged up in front when the swarm is poured from the pail close to the hive, into which every bee, sliding out from the pail, will quickly disappear, when the new colony is at once set upon its stand with every prospect of success. Before hiving the swarm, a slight sprinkling of the cluster with cold water from the syringe will render it less disposed to fly away, and more amenable to the process of 'hiving.'

Artificial Swarming, in its various aspects and methods, need not be recapitulated here. Let it suffice to refer our readers to *Modern Bee-keeping* and to Cowan's *Bee-keeper's Guide*, where the instructions given cannot be improved. One word of warning only will we add: 'Do not resort to artificial swarming until the colony is nearly ready for natural swarming;' that is to say, do not divide a colony until at least ten frames are well crowded with bees having abundance of brood.

Unions and Weak Colonies.—For profit by surplus honey, do not attempt to build up weak colonies by the addition of brood or bees taken from stronger ones. It is far better to add the weak to the strong, thus reducing the number of hives, but greatly strengthening the apiary as to its honey-collecting powers. The only exception to the rule is where a weak colony possesses a young and prolific queen, which is worth saving; it may then be advisable to build up by an additional frame of brood covered with young bees, and by stimulation. By robbing good colonies to strengthen weak ones, it is possible to bring all up to a medium standard, but any two of these will collect less honey than one really good colony. Our object should be to obtain as many *first-class* colonies as possible, and this can never be accomplished if we rob them of brood and bees.

Feeding.—So long as the cold weather continues, and while little or no food is to be had from the fields, feeding must be by no means neglected. The strong colonies require it more than the weak. When giving combs of honey, it is best to uncap one side of the comb only, and to place that side next to the brood-nest—not in its centre—having first cut a hole of about an inch in diameter in the centre of the comb, as a passage-way for the bees. Pollen is now procured in sufficient quantity from the fields to enable us to dispense with the artificial.

Putting on Supers.—This should not be done until the hive is crowded with bees; neither in cold weather, nor until honey is coming in freely. Injury very often results from supering too early, such as reducing the temperature of the hive, chilling brood, disheartening the bees, and other evils following on these. We are often asked when supers should be put on; just as if seasons were always alike—never early and never late—the population of all hives equal—queens equally prolific, &c. In that case, we might fix a date which should last for all time without varying. Until the millennium of bee-keepers arrives, we can only offer the above suggestions. As a general rule, hives full of bees, fruit trees in bloom, weather warm, are the three conditions which must be our guide.

Separators.—These we always use in our section-racks and cases, and we prefer tin to wood, on account of its cleanliness, and being less liable to propolisation. Supers, especially in the early part of the season, must be well wrapped up in warm material, and should rarely be uncovered, or loss of warmth will follow. There should be one bee-space only at the *bottom* of all section-racks—but not at the top—so that when 'tiering up,' *i.e.* placing an empty rack beneath one filled, or partially filled, there may be a single bee-space, and not a double one between the separate divisions of the whole super. This is important, otherwise comb will be built between the several racks, to the spoiling of sections, and increasing the difficulty of removal and separation. After a trial of various kinds and sizes of sections, we much prefer the one-piece V-sections $4\frac{1}{2} \times 4\frac{1}{2} \times 2$ in. as the 1-lb., and $5\frac{1}{4} \times 6\frac{1}{4} \times 2$ in. for the 2-lb. Those dovetailed at the four corners are less stable, and do not keep their shape so well.

Bee-flowers now in bloom, or due, are blackthorn, furze, coltsfoot, plums, apples, pears, arabis alpina, &c. Soon the hedges will be white with the hawthorn, or may-bloom, than which no flower yields a finer quality of honey. We have several beds of *Aubrietia græca*, covered with its pretty purple bloom, on which in fine weather the bees disport themselves in such numbers as we never saw on other flowers. Wallflowers, too, obtain special notice.

Doubling Hive.—The prize offered for a hive of this description, at the Royal Show at Norwich in July next, is, we think, a step in the right direction, but, in our view, limiting the price to 15*s.* is a mistake. A complete, and really good hive, should consist of stand, two body or brood boxes (interchangeable), two racks or cases of sections (also interchangeable), and ample roof or cover. Is it possible that all these parts can be supplied of sound material and good workmanship for 15*s.*? We trow not, and should have suggested 18*s.* as

the lowest limit. We apprehend that the above-named parts may be exhibited as two hives, each priced at 15s., but should be glad of an authorised statement on this point, as opinions vary and many are in doubt. Supposing two hives permissible, then No. 1 should consist of stand, two body boxes (for doubling), and roof; No. 2, of stand, one body box, two section cases, and roof, the separate parts belonging to each hive being interchangeable with those of the other hive. Is this the intention of those who drew the schedules? Is it also allowable that the body boxes and section cases shall be *invertible*, or *reversible*, as well as interchangeable? We know that enlightenment on these points is anxiously desired by several well-known firms of hive-builders, and hope soon to see in our columns a solution of the difficulty.

Enamel Cloth as Winter Covering.—We notice in last issue 'F. L.'s' letter on 'Upward Ventilation.' If he will refer to pages 3 and 136 of the *B. B. J.* for the present year, he will find that we have reported favourably of the use of enamel cloth during the late winter. 'F. L.'s' remarks are very much in accordance with our own views on this subject. In our experiments, hives with the largest populations, and confined to about as many frames as they covered, wintered best under enamel cloth. The smaller colonies with more space showed dampness on the outside combs. But all came safely through. The few losses we have sustained have been of colonies wintered under pervious quilts. All our best stocks—now crowded with bees and full of brood, on ten frames larger than standards, and ready for supers when the weather changes—have been wintered under the enamel cloth. Their hives continued throughout the winter perfectly dry, and none were attacked by dysentery. These colonies were wintered on separate stands, well protected by outer cases and roofs, in a sheltered position with a southern aspect, and with entrances open as in summer.

SOUTH KENSINGTON EXHIBITION.

Additional subscriptions to the Guarantee and Donation Funds:—

	£	s.	d.
Herts Association	2	2	0
Chas. E. Fletcher	2	2	0
Rev. W. E. Medlicott	1	0	0
W. H. Dunman	1	1	0
Meadows & Howard	0	10	6
Mrs. E. Hare	0	2	0
M. Taylor	0	2	0
Announced in our last issue	97	11	0
	£104	10	6

THE LATE DR. F. STOCK, M.A.

In our last week's number there is an interesting communication from Dr. Stock of Mill Hill, respecting the hearing of bees and experiments with the phonograph. He did not live to see his note in print. We extract the following from the *Nonconformist* newspaper:—

'We deeply regret to announce the untimely death of Dr. Frederick Stock, of Mill Hill, which occurred on Monday, April 19, after a brief illness of only some ten or twelve days' duration. He had been at Mill Hill but a few years, having succeeded Professor Harley in 1881 as master of Burton Bank Boarding House at Mill Hill School, and during his too brief tenure of office there he has won the love and esteem both of his colleagues and his pupils. He was born in 1854 at Longwood, near Huddersfield, where his father, the late Rev. J. Stock, LL.D., was pastor of Salendine Nook. He received his first education at the Devonport and Stoke Grammar School, proceeding after a brief interval to University College, London, where his career was one of long and brilliant success. He graduated as B.A. at London University in 1872, taking honours in moral and mental science. In 1875 he took his M.A., after which he became a student at Heidelberg University and at Paris. In 1879 he obtained the highest honour his university had to offer, by graduating as D.Lit. In recognition of these distinguished successes he was elected Fellow and Member of the Council by his College. In 1884 he married Miss Elizabeth McDougall of Banbury. By the members of his own family he was almost idolised, and by a large circle of friends was admired and loved. But now he has left wife and child, mother, brother and sisters, to rejoin his sainted father.

'Dr. Stock was baptized by his father, and received into the church at Morice Square, Devonport, from which his membership was transferred to Salendine Nook, and finally to the Congregational church at Mill Hill. He will leave behind him the memory of a short life of thirty-one years, but one of stainless purity, of honourable work, of noble purpose, and undeviating rectitude of aim and of action.'

FRANCE.

The Central Apicultural and Entomological Society held a meeting in Paris on the 17th March. The Abbé Delépine read a report upon the apicultural exhibits at the last general exhibition. The report stated that the general appearance of the exhibition was satisfactory, and the samples presented in an attractive manner. The report points out also that the lots exhibited were eighty-four in number, made up as follows:—Run honey, 30; honey in the comb, 25; and wax, 29. The run honey was sent from the various districts of France, but in some instances it was deficient in purity and flavour, which might be attributed to the lateness of the season, and the unsatisfactory mode of extracting. The centrifugal slinger is little known as yet, and in many parts of the country the honey is not taken until the month of September, while in many instances it is left in the hive until the following spring. In France, the report continues, the greatest attraction in a bee-show is always the honey-comb. In this instance the combs exhibited by M. Asset were the most admired, as were also a number of American sections tastefully put up in coloured paper. The commissioners therefore recommend that still greater attention should be given by bee-keepers to the question of taste in the putting up of their honey. In conclusion, the commissioners finished their report by recommending that 'in future all apicultural exhibits be examined by thoroughly competent bee-keepers and honey and wax merchants.' This, the commissioners believe, is what the exhibitor is bound to wish, and it is anticipated that if the duty of judging be vested in competent men and becomes an established rule, the number of exhibits may be expected to double itself.

JOTTINGS BY AMATEUR EXPERT.

'Mel' sapit omnia.

Snubbing.—So 'Nucleus' felt somewhat snubbed by my reply to his query; I am deeply pained to know it; it was farthest from my thoughts to so treat any self-constituted 'novice.' We may all learn from the youngest; and this subject of 'Drones croaking' is certainly new to many of us. For the sake of readers who are not 'cousins,' I may interpret 'Dumbledory in a pop-dock'—'cockchafer in a ginger-beer bottle.'

Croaking.—What a pity 'South Cornwall,' 'Manager,' 'Nucleus,' and Mr. T. A. Chapman, were not at the last quarterly Conversazione of the B.B.K.A., when the 'piping of queens' was being discussed; what light they could have thrown upon the subject! 'Manager' alludes 'to the movement of the queen's body when piping,' and says the 'croaking' drones behave in a similar manner. Perhaps, like an obliging 'Cousin,' he will give the

readers of the *Journal* a more detailed account of the whole proceedings.

'Piping' of Queens.—The writer of 'Useful Hints' refuses to defend his 'Hints' by controversy. I do not wish to beguile him from his usual course, but to give my experience. I never had an after-swarm from a bar-frame hive, always having taken means to prevent it. But, on the other hand, I never had an after-swarm *from a straw skep if the queens did not 'pipe' late at eve and early in the morning of coming off.* I am not above learning from one of the old grandmothers of bee-keeping. I have one, a near neighbour—a widow. I took her in hand some years ago, drove her condemned bees for her, showed her how to get three first prizes in one season for her honey, and, what is far more important, got into her favour. She still sticks to her old method of 'taking-up,' but allowing her bees to be 'drove' instead of 'burnt.' She often gets her five stocks increased to fifteen or sixteen in one season, and has called me into her garden, when passing, at 5 a.m., to listen to her 'casts' piping, and she will tell me constantly when they will come out, always making a point of listening early and late. The method recommended in 'Useful Hints' for 'preventing after-swarms' is quite right for bar-frame hives, but the question with this old woman and the 'novices' who ask the queries in these columns is, 'How are they to know when after-swarms are likely to issue?' and to such I answer, 'Piping' is a good, although not an infallible guide.

Raising young Queens.—'Useful Hints' has attempted to answer the question put by the Rev. F. G. Jenyns, as to how we shall best keep a succession of young queens in an apiary of, say, three or four hives, with the least possible amount of loss of time and honey. The answer given is good, if you have the (bad) luck to get a swarm, but I have not had the happiness to get *but one swarm from my bar-frame hives for three years.* Will Mr. Simmins please note? Query: How am I to keep my hives replete with young queens without purchasing from dealers? 'A Surreyshire Bee-keeper' in *Journal of Horticulture* says that is the best method. Yes! in the face of some of the revelations Mr. Blow has just made to us in these columns. How it pleased me to see that exposed; one half of our troubles in the shape of Bacillus and furious bees may be there traced to its source. But I shall get into hot water with the dealers.

Excluder Zinc.—We must prepare to do the last sad office for this article; a few gave it a bad name and all have joined in the chorus. I do not like the look of this; that it has kept many queens out of sections I do not doubt. If people throw it away—and I hope they will—without taking other precautions they will fare the same fate as a 'leading light' in my present adopted county. Said he to a friend, 'Come and look at my super, the bees have filled it and sealed it over in no time. Splendid! it is fit for the show!' 'Yes,' said the friend, 'it is the handsomest specimen of drone-brood I ever saw; all the sections are complete; I hope you will get first prize, you deserve it.'

'Devonshire Rector' is responsible for more than getting the 'cloth' abused over 'them darned gnats.' Writes a hon. sec. to me: 'Ay! that's an A 1 yarn! I laughed till I cried, and then laughed again: poor old countryman!' I hope 'Rector' got him to go to church and preached to him from 'The second is like unto it.'—AMATEUR EXPERT.

HONEY IN THE HIVE.—Ascertain by actual weight the amount of honey which a comb of an average thickness will contain, and from that estimate the amount in each hive. Allow for the weight of the combs, especially if old, and also the amount of pollen they may contain. For out-door wintering each hive should contain at least 25 lbs.; for in-door wintering, or where the hives are well protected, 20 lbs. will do.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* MR. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SOUTH AFRICAN BEES.

[292.] In these days of keen competition it has always appeared to me that one of the first objects of the bee-master should be, while he is studying how best to facilitate every operation in connexion with bee-culture, and to procure honey in its purest form, to raise his stocks to the highest state of excellence, by improving the breed of his bees. In this way, and in no other, is it possible to concentrate in one strain all those characteristics which commend themselves to the bee-keeper as most desirable.

There exists at present a good variety of material to work upon in order to accomplish this, and with judicious selection and careful attention the best results should accrue. There are 'Eastern' bees and 'Western' bees, most of them probably the outcome of admixtures in the past, and differing more or less from each other in intrinsic qualities, yet if the aim is, as I think it must be, to obtain by proper management a bee, hardy, vigorous, and active, prolific, home-loving, and honey-crazed, yet gentle and submissive withal, a kind of typical bee, I am of opinion that the best of factors will not be complete until the 'Southern' bee—the indigenous 'African'—has received its share of consideration. To this race I have already more than once referred in your valuable *Journal*, strongly recommending it a place in the apiaries of Europe and America, and meanwhile have left no stone unturned to facilitate its exportation and ensure its safe introduction. The chief obstacles to these are, I am happy to say, in the way of being overcome, and I live in hopes of seeing 'Africans' figure ere long in the *B. B. J.* in the category of established foreigners.

As to the race itself, I regard it as the outcome mainly of the old Egyptian bee (*A. luteofasciata*), crossed by some greyer variety, probably the Cyprian, and finally by the black bee. The special features and characteristics of all these, the 'Africans' in a more or less degree retain. In this their native country they undoubtedly exhibit all the fine traits and reputed excellences of the much-lauded 'Ligurian' and 'Carniolan,' with none, or traces only, of their recorded drawbacks. After fifteen years' experience of 'Africans,' against ten years of closest intimacy with ordinary European bees, I can safely say that under existing conditions their excellence is of a very much higher order, and this without disparagement of my older friends.

In reference to the bees specially under notice, I may remark, by the way, that by close observation and unflagging attention in the matter of breeding, I have myself educed most promising features, though upon principles which may perhaps be at variance with the notion of some of your readers, but which are practically successful nevertheless, viz. in the case of a superior stock once obtained keeping to the one same family blood alone, branches of which are at remote distances, from which alone 'crosses' are made: but more of this in the future should occasion require.

The 'Africans' have the advantage of being perfectly healthy, being constantly recruited from wild stock

reduced to domestication. They are very prolific, the bees of a single stock weighing from ten to twelve pounds. They are very tractable, and under ordinary treatment very manageable, and though possessed of strong offensive instinct, rarely require any smoke. Their working capabilities when honey is to be had are remarkable, early and late in all seasons, and even by moonlight, while their staying power under extreme drought is scarcely credible. These few observations will not I hope be considered out of place, but act I trust as a fresh stimulus to well-directed efforts.—J. W. Stroud, M.D., *Port Elizabeth, Cape Colony.*

A CURE FOR DYSENTERY.

[293.] During the past season I had a few hives badly affected with this disease. I followed the generally adopted plan of clean hives and dry coverings. In addition to this I placed the hives in a dark room, and warmed the bees with hot bricks for several consecutive hours, keeping the empty part of the hive at a temperature of between sixty and seventy degrees. The effect on those treated this way was most successful. I took some of the bees in my hands, one at a time, and in each instance their swollen bodies deposited a dry, powdery substance of the colour of their excrement, after which they appeared relieved. I tried some other bees in my hand that had not been previously artificially heated, and though their abdomens were much swollen they made no deposit. I remember some time ago some one suggesting in the *Journal* (I believe it was 'Useful Hints') that bees probably during long, unhealthy confinement deposited excreta in a powdery form, and my observations go a long way towards confirming this idea. After this heating process the bees were removed to the garden, but were unable to fly for a month, weather being against them. At the time I changed them to the clean, dry hives they were dying by hundreds and lying in heaps on the hive-floor. My boy assisted me, and he was continually pointing out what he believed were queens—the bodies of the workers were so swollen. When the time for flying came I watched with anxiety to see, if they were alive, what quantity of dead they would carry out. I was amazed that no dead were delivered at the entrance, and concluded that the stocks had so far weakened that they were incapable of performing the task. It was a delightful sensation, however, on uncovering them to find that there were scarcely any to carry out, and that the abnormal conditions previously noticed had all disappeared. I am strongly of opinion that bees do not suffer from long confinement, provided the temperature is not very low and too exacting on their energies. If we notice the excrement of bees at this season, it does not partake of the watery character of that which is observable in cases of dysentery. This is not on account of confinement. I have had some bees enclosed for the last month, and on liberating them a few days ago their fæces had all the appearance of that of bees that had been flying the previous day. I may say my bees now do not fly when they wish, but when I wish, and that shortly I hope to exhibit at our shows a hive for the prevention of the most destructive scourge in bee-keeping—spring dwindling—and at an early date I will endeavour to write you on the subject.—John Rudge, *The Bee-Hive, Dursley.*

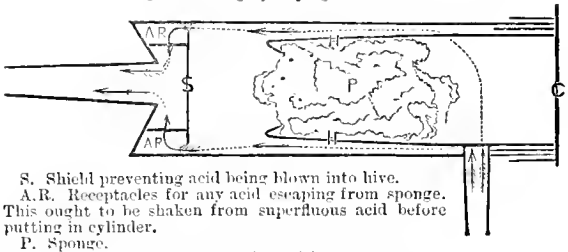
A NEW FUMIGATOR.

[294.] I have sent with this note a fumigator I have invented to take the place of the ordinary smoker. You will see that carbolic acid is the agent used. I have been in the habit in taking away sections of using a feather dipped in diluted acid, to which you have referred on several occasions in the *B.B.J.* This manner of applying the vapours of the acid is very unsatisfactory when placed in the hands of novices or careless bee-keepers; if the sections are touched with the feather, it leaves an unmistakable odour for some considerable time; in fact, I have tasted it distinctly on eating a section. I therefore conceived the idea of using the vapour of the acid only as a means of quieting the bees when manipulating; in this I have been eminently successful. All manipulations this season I have performed with the aid of this fumigator. The bees act in the same manner as with smoke, rushing to their cells and gorging, and allowing as great a freedom to be taken with them.

My first attempts were rendered rather dangerous, on account of the acid dropping, or being blown, into the hive, which made a great commotion, and would cause a general exodus of the stock, which I found to be the case last summer. I therefore produced the accompanying appliance, which would entirely prevent anything but the vapour from the acid entering the hive. I have to-day overhauled fifteen stocks with it very satisfactorily. Its advantages are:—

1. Always being ready for use.
2. No lighting required, which, you know, is such a nuisance.
3. Will last without recharging for a week with ordinary work.
4. Its simplicity in recharging not taking more than fifteen seconds.
5. Its portability, as it can be carried—after separating—in the pocket.
6. Its handiness in driving a swarm from any inaccessible place, or from flowering shrubs, rose-trees, &c., without the danger of breaking same.
7. Does not matter how you lay it down, there not being any fuel to keep alight.

The air is drawn in through and around sponge, and is expelled in same manner; so gets thoroughly impregnated.



S. Shield preventing acid being blown into hive.
A.R. Receptacles for any acid escaping from sponge. This ought to be shaken from superfluous acid before putting in cylinder.
P. Sponge.
H. Hooks (4) to hold sponge in position.
C. Cap fitted to prevent acid getting on hands of manipulator, the sponge being drawn out at the time of removing same.

I have an idea that the use of this, instead of smoke, would prevent, to a certain extent, the ravages of Bacilli, but of that I am not in a position to state. Of course, the application of carbolic acid is not my idea; simply the manner of applying it.—W. B. Webster, *Wokingham, Berks.*

HIVE-PORCHES. [202.]

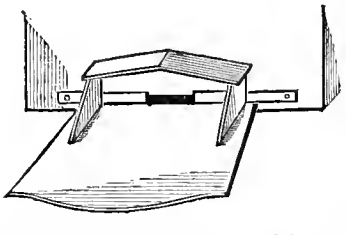
[295.] Having given a considerable amount of attention to this subject, followed by actual experiment, I should like to offer a few remarks giving the result of my observations. I think I have copied and tried nearly every kind of porch I have seen, and have at last decided to use only the one I shall now describe.

First, as to the *Landing Board*. This should project from the hive about nine or ten inches, and its free edge should measure eleven or twelve inches. Its attached edge need not be so much. This liberal size is necessary when honey is abundant at a distance, and the weather at all cold. I have seen the bees returning home from the heather tired and heavy, and throw themselves on to the board like an intoxicated or exhausted man,

frequently resting a while before crawling up to the entrance. Sometimes they will alight on a bush, or your clothes if you are near the hive, and after a little rest enter the hive—this especially if the porch is not all that is to be desired. Should the board be small, they sometimes miss it and fall to the ground, and are chilled before they rise. Again, the board should have a good slope, making an angle of about 120° (the third of a circle) with the hive front. This only prevents wet and dead bees, and other *débris* not remaining on it, but facilitates the landing of the bees. It is more adapted to the slope of the bee's body as it lands, and thus it gets hold with all its six feet at once. I have often seen bees skid on a level board and strike the hive front. Sometimes it prefers instead to land on the vertical hive-front above the entrance. When a bee is out for an airing, after being confined, you will see it always prefers to land on a sloping or vertical surface before a horizontal one to rest. The slope prevents departing and returning bees meeting in collision, too. The board should never be painted, and I prefer it *not* planed, unless too rough. I do not like it to reach down to the ground, because of earwigs, snails, mice, &c.

As to the *roof* of the porch, I consider this the least important part. It is only useful to prevent driving rains or snow from striking the hive entrance, and in winter to shade it. Indeed, it is rather in the way of the bees than otherwise, as they prefer to alight as close to the entrance as possible. I therefore make mine project only three inches, and level so as not to drip on to the landing-board; and by making a saw-cut across the under surface, it inclines slightly to the sides.

Then as to the *sides*. These are of more importance than, I think, is generally accorded to them. They are undoubtedly necessary for saving bee life if wind is blowing (as it often is) during the honey-season. I make the upper edge three inches, same as the top, the lower edge four inches, or more, to project along the landing-board. There is no reason why the sides should be further apart than the whole width of the entrance, say, six or eight inches. On the contrary, for many reasons, the porch should *not* be larger than is necessary.

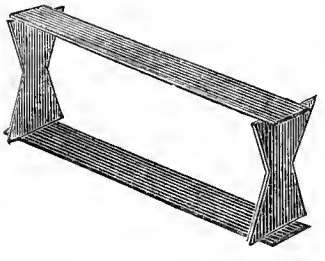


Rain and snow drive into the larger porches, or the wind sweeps the bees out of them when landing. Again, bees often have more difficulty in finding the entrance in a wide porch, particularly if the entrance is narrowed or partly closed. I have seen bees seeking the entrance in the corners of the wide porch. Then the *slides* pass between the sides and the hive-front, and can be moved from the *outside* of the porch—a desirable feature when robbing is noticed and the bees irritable. The height of the sides need not be more than two and a half inches at the edge touching the hive, and should be put at right angles to the hive-front.

Thus we have every facility given to enable the bees to land readily and safely: they fly into the porch and are at once sheltered and safe. I have seen it urged that when the wind is blowing in front that this kind of porch encourages it to enter the hive. This would hold good if there was another opening in the hive for the exit of the wind, which there is not; but even should this be the case, by making the entrance in a certain way I minimise the effect of this. These remarks are already too long, but with the Editor's permission I may explain this again. I may here remark, however, that the smaller the mouth of the porch in proportion to the entrance, the less this objection holds good. In this case, the size of the porch matters more than the shape I have noticed, too, that wasps and robbers like a large porch better than a small one.—Doctor Craigs, *Dumfries, N.B.*

REVERSIBLE FRAMES.

[296.] For some time past I have thought that the 'coming frame' must be a reversible one. I do not say that mine *is* the coming frame, but I *do* say that it is simpler and cheaper than any that I have hitherto seen or heard of. It seems to me that if bees are to have their combs reversed it must be done quickly, and with as little annoyance to the bees as possible. If the frame has to be altered in any way whatever, in order to reverse it, I consider it imperfect. I have invented a frame which is *exactly* the same top and bottom, and, therefore, it can be reversed in a moment, and by a very simple contrivance the proper distance is kept. It consists of only *four* pieces of wood. This is accomplished by the frame *standing* on a little strip quarter of an inch high, *each* side of the bottom of the hive. I can supply them singly or in numbers, but the right of manufacture is mine.—W. Chitty, *Pewsey, Wiltshire.*



HAS THE BEE-STING EVER BEEN AN OVIPOSITOR?

[297.] I must apologise to Mr. Grimshaw for not having ere this thanked him for so kindly and fully answering my queries on the above subject. Useless or rudimentary jaws may be seen in the perfect insect of the common mayfly, consolidated wing-cases on the common purple ground beetle, useless wings on the vapourer moth (female), and as every one knows the female glowworm is without wings at all. By the way, why should the female glowworm be luminous more than other beetles with apterous females? That the unimpregnated queen of Apis mellifica should be able to lay fertile eggs (even though drones only result from them) is, I suppose, an example of parthenogenesis, although not such a satisfactory one as that shown by experiments with aphides or the gipsy moth.

I was looking at a queen-wasp's sting under the microscope yesterday and was surprised to find that the inner sheath of the sting (or what is generally taken for the sting proper) had not a perfectly even surface, for at a nearer distance to its point than one-third of the entire length of the sting-case there rose a sort of hump sufficiently abrupt to prevent the sting case (which is left behind together with the sting proper and poison-bag, when the honey-bee stings anything) from entering any object beyond it. The sting proper is only just visible to the naked eye. The two plates covering the sting case are lovely under the microscope, and so well adapted for keeping the sting-sheath clean and bright. If the sting was once an ovipositor, as there seems to be no doubt it was, the channel through which the ova used to pass is now diverted, as it does not now end in the point of the sting-case. Can any of your readers tell me what is the supposed use of the claw on the wing of the nestling moorhen?—Maurice C. H. Bird, *April 17th.*

STINGS AND GLOVES.

[298.] It has been repeatedly remarked that the experience recorded from time to time in the *Journal* is nearly always of a favourable character. Disappointments and losses are mostly kept in the background. Now, I think

it probable that many amateurs have, like myself, found that it is not so easy to handle bees without protection, as they had been led to suppose I began bee-keeping in 1882, through reading Mr. Cowan's *Guide Book*. I commenced by the purchase of a stock hive—a skep—in the autumn of that year, and from the directions given in the above book I made a frame-hive to put the swarm in the next summer. This was done successfully, and a second swarm put into a skep. Never having seen a frame-hive before, I was very fond of manipulating, as I suppose most novices are; but, strange to say, though I wore no gloves, I did not get stung, in fact, I could do almost anything with that hive of bees without their molesting me. The next summer I increased to six bar-frame hives, and got through the early part of the season in the same happy manner; but, at last, when removing sections from one of them, I received two stings. I took no notice of it at the time, but my hand subsequently swelled to a great size, and was so stiff and painful that during the remainder of the day and half the following one, I was incapacitated from my work, as that work required the employment of the full force of the muscles of the hands. Later on I received other two stings with a like effect. Well, I thought this would never do, as, being a working man, I could not afford to lose my situation, which I feared would be the case if this was often repeated, and therefore, although reluctantly, I purchased a pair of gloves, and have since made it a rule to wear them when dealing with the bees. Now, my bees, which were originally blacks, have become hybridised, and I have often found that they attack my gloved hands most furiously, but whether it is because I wear gloves, or because they are hybrids, I cannot say. Last autumn, when preparing the bees for wintering, the inmates of one of the hives attacked me as soon as it was opened so furiously and so pertinaciously, that, in pity for them, I closed it up without removing surplus combs, or doing anything beyond seeing they had sufficient stores. In this case they literally covered my gloves and parts of my clothing, and scores, if not hundreds, perished from the loss of their stings. It seemed, indeed, as if every bee in the hive was eager to commit suicide in that manner. Now, I should like to ask what, in the opinion of more experienced hands, was the cause of this? They were not queenless, as I found brood in the hive when examining it this spring, at which examination they showed none of their previous pugnacity. Neither was it that they were not carefully handled. Has any fellow reader experienced the like? Also, I would like to know what an old hand without gloves would have done in such a case? I have noticed on many occasions, even when the hands have been moved most slowly and deliberately, that bees have darted straight off the combs on to my gloves, and stung instantly without reference as to whether the hands were naked or not; and, therefore, I find it hard to believe that any less stings would have been given had the hands been really naked. I sincerely wish to take the advice given to 'Rector' in a late issue, and to do without gloves, as they are clumsy things; but is there a reasonable probability that I should soon get so inured to it as to be able to stand stinging with impunity? Could an old bee-master thus with impunity stand forty or fifty stings? If some of our expert friends who kindly give advice on many points would be so good as to give their experience and opinions on the questions I have ventured to ask, I have no doubt they will be giving both pleasure and profit to many others in addition to—A COTTAGER.

[Your bees at first were easily handled. Having become hybridised they gave evidence of their new blood. The gloves, saturated with bee-poison, roused the bees to fury. 'A Cottager' does not state whether he employed smoke or carbolic acid solution to dominate the bees; an old bee-keeper would have adopted some such means.]

Replies to Queries.

*** In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[203.] *Bees Croaking.* I sometimes hear a croaking noise somewhat similar to that produced by the stretching of a cable round a pillar, and have come to the conclusion that it is caused by the tips of the wings vibrating and striking the smooth surface of enamel cloth. I should be delighted to think we had got hold of a portion, an alpha, of bee-language.—R. A. H. GRIMSHAW.

[256.] *Two Queens in one Hive.* (Trevor Saynor).—Yes, it is quite possible, but requires some skill, judgment, and knowledge of habit. I have had as many as six queens in one hive divided by excluder, each division having its own small entrance. When I required a queen I took one out, and when I had one for which I had no immediate use I put her in until I wanted her. I have even wintered bees in this way. I have done the same in a large twin hive, so that if one queen got lost it did not much matter. I have found this a capital way of uniting; but, as said before, it requires some judgment. For instance, towards the spring, when the bees begin to diminish, the lot may go over to one side, leaving one queen with too few to keep up sufficient heat. No division should contain less than three frames, but then they may be very small frames.—M.

[277.] *Best Size Sections.*—I am of the same opinion as your correspondent in last issue, that the $4 \times 4\frac{1}{2}$ sections would be an improvement on the $4\frac{1}{2} \times 4\frac{1}{2}$. I am of his opinion, that an oblong block of honey has a better appearance in a dish than a square block, and would, I believe, be more saleable. I have never used any but the $4\frac{1}{2} \times 4\frac{1}{2}$, but would change if I could get the others.—F. C. THOMPSON.

[281.] *Packing Sections for Travelling.*—I think chaff would be better than hay, or straw, or shavings, in packing sections for travelling by rail.—F. C. THOMPSON.

[287.] *Upward Ventilation.*—I always cover my hives down so as to *prevent* upward ventilation, but I also make hives warm by means of sawdust, &c. at the sides. Three or four thicknesses of woollen material (flannel, carpet, cloth, &c.) intermingled with sheets of brown paper and cardboard, over which I lay a slab of wood, and a brick for pressure, forms the general run of top coverings I use.—E. B.

[288.] *Sweetening Hives.* (G. C.)—Remove combs, and wash inside of hive thoroughly with carbolic soap, exposing it afterwards to a current of air; clear the combs as much as possible from dead bees and hang them up in some covered place, where the bees cannot get to them, in a current of fresh air, spraying them with salicylic acid solution. If the foregoing is done thoroughly, a good job will be made of it, so that a swarm can then be placed in, and supers put on at once.—W. B. WEBSTER.

[289.] *Extra Queens.* (Honeysuckle.)—They can, with a little attention—which with ordinary blacks is not worth the trouble—be preserved in three or four framed nuclei.—W. B. WEBSTER.

[290.] *Swarming and Non-swarming.* (Honeysuckle.)—This would entirely depend upon the respective merits of the mother-bees; if they were of equal quality, and the two four-frame lots being in such condition early in the spring, they would beat the eight-frame lot in the honey yield; that is not allowing for any surplus from the swarm after it has left the parent stock, which I presume you mean.—W. B. WEBSTER.

[291.] *Raising Queens.* (Honeysuckle.)—These must be started and the larvæ reared in good full colonies having plenty of young bees; this is imperative if it is wished to rear healthy and prolific mothers.—W. B. WEBSTER.

Queries.

[299.] *Unfertilised Queens.*—Did ever *any* bee-master in the United Kingdom rear a queen-bee either naturally or artificially, and, as soon as hatched, make her a life prisoner, at the same time exclude *every* drone from the hive? If so, did the queen become a drone breeder? Has

ever any such experiment *been* made? Like your correspondent, 'A Pupil,' in your last issue, page 177, I have a deep interest in the subject.—A. Cockburn.

[300.] *Worker and Drone Eggs.*—I have a pure Ligurian queen who is now laying drone eggs in worker cells; at the same time there is sealed worker brood. What is the reason of this? Is it possible for the spermatheca to have become exhausted, the result being drone eggs?—E. W. P.

[301.] *Sting Antidote.*—What is the best antidote for stings?—Melissa.

[302.] *Wax-discoloration.*—What is the cause of the discoloration of wax?—Melissa.

Echoes from the Hives.

North Leicestershire.—Only four good days for the bees between 24th ult. and 24th inst. Good Friday was a splendid day, and so is to-day (Easter Eve), The bees are well at work on willow, gooseberry, currant, arabis, ribes, plum, and coltsfoot. Stocks are many of them still weak, from the effects of the heavy losses sustained in the snow last month. There are a good many reports of queenlessness. A stock supplied with dry sugar a-top was in full flight on Sunday, the 18th inst., but on Monday died: little of the sugar had been taken.—E. B.

Honey Cott, Weston, Leamington.—Glorious weather now, the cuckoo and swallows are come, plum-trees as white as snow with blossoms, bees roaring at work, hive entrances crowded with young bees sunning themselves. Have been sparingly spreading brood where stocks could stand it without risk, as perhaps in a few days we may get a sudden chill. The blackthorn is out in places, and buds ready to burst in others; and generally when that is in bloom we have a touch of what is called round here *blackthorn winter.*—John Walton, *April 26th.*

South Derbyshire, April 26th.—Since the 8th inst. east and south-east winds, with occasional sunshine, have prevailed. Good Friday was a perfect bee-day, work in full swing from 8 a.m. to 5 p.m. Examined hives after 5 o'clock. Find cold wind has finished off nearly all last year's bees, and hives are now rapidly becoming stronger. In hives which have last year's queens, brood-spreading is quite unnecessary, for every available cell that the bees can cover is tenanted. —M. J. Astle.

Rerlin House, Donegal, April 23rd.—The weather here is very unfavourable for the poor bees. On the 9th inst. had a good fall of snow and piercing cold: it has been dry from about the 13th, but cold east winds prevailing. Bees flying very little, but when favourable gathering any amount of pollen. I gave them meal on shavings about a fortnight ago, but only the Italians worked on it, and then only for a few days. Have been stimulating for the last month. I transferred one straw skep on the 1st, and two more on the 16th, into frame-hives, of which I have twenty. The honey season here is always late; hope it may turn out a good year.—Geo. Turner.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Oxoniensis.—*Carniolans.*—We have not actually proved that Carniolans collect honey from red clover, but we are inclined to think, from their length of tongue, and the large size of the bee, that they do.

W. C. E.—*Removing Bees.*—By removing your bees half a mile to a field of white clover you would lose more than you would gain by the loss of returning bees. Half a mile is a short distance for bees to fly, and at that distance we are not at all certain that they would not gather as much honey as if set down in the field itself.

H. W. D.—1. *Feeding.*—It is not necessary to feed every night. A large bottle-feeder, with two or three holes turned on, will not require refilling more than once a-week. 2. You will not find one hole sufficient. Much, however, depends upon what feeder you use. 3. There must have been some fault in replacing the bottle. If the feeder was accurately made there would be no leakage, whatever the consistency of the syrup. A good bottle-feeder will retain *water* as well as syrup. The bottle should always be *full* when first placed upon the hive. There is not much fear of robbing now, since the bees obtain all they require from natural sources. 4. The tin feeder you mention acts very well, but it allows the escape of warm air from the hive, and in cold weather the bees become chilled in the feeder. There is no objection to its use in warm weather. 5. *Spreading Brood.*—If there is brood in all the six frames remove the outside frames (from each side) to the centre, and place a comb of sealed honey on each side of the nest, having first uncapped the cells on the sides next the brood. If only three or four frames contain brood, do not spread at present. 6. We recommend enamel cloth, *decidedly*, for summer use. Its use in winter is a moot point. We ourselves wintered a number of colonies under the enamel cloth during the late winter most successfully. Your sample is rather thick, not sufficiently pliable. Try Neighbour's. 7, 8. *Transferring.*—It is better to transfer in a warm room. In a temperature lower than 70° Fahr. the brood is liable to chill. From skeps the bees should be driven and confined in an empty skep, when their hive may be taken indoors, and the transferring may there be performed with ease and at leisure. This should be done in the morning before the bees begin to fly. When the transferring is complete place the new hive on the old stand, and shake out the bees on a board in front, when they will at once enter their new abode. The operation must only be performed in warm weather, when bees are flying freely. Care must be taken to obtain a sight of the queen when driving. The Woodbury frame, being of nearly the same size as the Standard, combs and brood may be readily transferred from the former to the latter. About mid-day, on a fine warm day, remove your Woodbury hive a few yards from its stand, and in its place set an empty skep, wedged up, on a large board. Take each frame from the 'Woodbury' and shake off the bees in front of the skep, brushing off with a feather the few stragglers remaining. Take the combs indoors, transfer, and proceed as in the former case. All transferring should be completed *immediately.*

F. J.—Enamelled cloth during the past severe winter has been well tested, and has been proved to be suitable for preserving the warmth of bees. It will also be found of service for summer use.

West Cornwall.—1. Enamelled cloth should have the shiny side placed on the frames. 2. Observatory hives with glass sides are not suitable for wintering bees; such hives are very desirable for exhibition purposes.

Tormoham.—*Aspect of Hives.*—It is not very material in which direction the entrances of hives are, but to have them face south or east is preferable.

A. T. Wilmot.—The comb forwarded was not infested with foul brood, but was a bad case of chilled brood.

Badenoch.—*Crooked Combs.*—You will find in previous volumes directions for straightening crooked combs.

E. M.—*Tin Feeder.*—See reply to H. W. D.

F. C. T.—Your bees dying of starvation while there was sealed honey in the hives was owing to the absence of winter passages and the distance between the cluster and the honey.

W. G. C.—*Metal Ends.*—These can be easily fitted to frames when filled with brood. All that is necessary is to cut off the wooden shoulders with a pen-knife and push the ends on. The slight raising of the frames is no detriment.

W. J. K.—*Treatment of Stocks with Fertile Workers, &c.*—Unite 1 and 2. Unite the contents of tree to No. 3. Saw the hollow containing the bees in half lengthways. Cut out the combs, tie them into frames and place in a hive, preserve the brood, add the bees from No. 3, and any combs containing brood.

W. W. (Brinklow.)—*Preventing Loss of Swarms from Skeps.*—If you give room by ekes beneath and supers at the same time, you may safely leave them from week to week.

W. W.—*Inversion of Skep.*—Place an alighting board at the old entrance, which will of course be above the old level, unless you remove the old stand and lower the skeps.

F. H.—1. *Bees perishing in Brewing Vat.*—The sweet smell of the wort was the attraction. 2. *Weak Stocks.*—Stocks containing only three frames covered with bees and brood in only one, at this season, are too weak to be of service, and had better be united as you propose.

Sussex.—*Doubling.*—1. By having outer cases as shown on page 148, or by fastening strips of wood bevelled on the top. 2. Yes; if you are going in for section honey, work on the plan given in our article in this number. 3. No; we have tried the plan, but do not find it any material advantage, and have found less pollen carried into the upper chambers with the entrance at the bottom. This should be large enough, as described.

W. H. Hughes, *Marazion.*—You can clear supers of bees in the way described on page 148, *B. B. J.*, or into a box fitted with a tube of perforated zinc, as shown in Fig. 6, page 151. We shall be pleased to give articles on re-queening hives, and in the meantime we would refer you to the chapters on queen-rearing and introducing queens in *British Bee-keeper's Guide-Book.*

H. C.—*Galvanized Tanks.*—Our reasons for objecting to galvanised tanks is that the galvanising consists of coating iron with zinc, and this, in connexion with honey, we have long since learnt by experience, was objectionable, because the acid in the honey acts upon the zinc to the detriment of the honey. Extractors and honey-tanks should be tinned. See page 71, *British Bee-Keeper's Guide-Book.*

*** *Through pressure on our space several replies will be forwarded privately to the Querists.*

J. Wilson.—Received with thanks three queen-wasps.

Received from Mr. E. C. Walton, of Muskham, Newark, Notts, his *Illustrated and Descriptive Price List of Moveable Comb Bee-hives and Apicultural Appliances* (18 pp.)

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Lyon, F., 91 Harleyford Road, London, S.E.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 12-16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Hückle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 30-August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

NOTICE.—For late Pollen grow SUNFLOWERS. SEEDS from Best Varieties, 3*d.* per Packet. Address W. Hollins, 9 Tillington Avenue, Stafford. 128

WILL BE READY SHORTLY.

A WORK ON 'BEE PASTURAGE,' dealing with the Propagation and Successful Cultivation of nearly 100 of the best Honey and Pollen-producing Trees, Shrubs, and Plants, giving the Time of Flowering, Soil best adapted for Growth, average length of time in Flower, Honey and Pollen Values, &c. &c.; also Chapters on Honey, Pollen, and on Sowing and Raising Plants from Seed.

Henry Dobbie, Thicktborn, Cringleford, Norwich.

SEEDS of the BEST HONEY-PRODUCING PLANTS known, for Garden and Field cultivation, in 3*d.*, 6*d.*, and 1*s.* Packets. One Shillingsworth free, with cultural directions if required. Plants of Figwort (2 years old), 5*s.* per 100; Myrobella Plum (2½ feet high), 6*s.* 6*d.* per 100; Thyme, Marjoram, 5*s.* per 100; Golden Rod, well rooted, 6*s.* per 100. Half quantity half price. Address Hy. Dobbie, Cringleford, Norwich.

THE MANAGEMENT OF STRAW SKEPS. Designed to teach the Cottager how to obtain the best results at the least possible cost. By attention to its teachings, Cottagers will be enabled to make their Bees a more profitable source of income than hitherto. Price One Penny. Six copies and upwards, post free. J. Huckle, Kings Langley.

DR. PINE'S BEE-KEEPERS' LOTION

Is now the acknowledged remedy for Stings, not only of Bees and Wasps, but of all Insects.

The following are among the Testimonials received:

'I have found Dr. Pine's Bee-keepers' Lotion most efficacious. I have been stung twice lately, and instead of having the annoyance and pain for a couple of hours, all ill effects went away in a few minutes, leaving no inflammation whatever. I have found it equally useful when applied to the bites of the very annoying "harvest bugs," from which we suffer much on chalk soils.'—D., *Dod.*

'On Sunday last a little boy visitor was teasing the bees in my garden, and received seven stings on the face and head. You kindly gave me some of Dr. Pine's Bee-keepers' Lotion, which acted like a charm. Soon after applying it the pain ceased, and in less than one hour there was no swelling or sign of inflammation to be seen. You are at liberty to make any use you please of this testimony to its effects.'—I remain, Sir, yours obediently, H. Carter, Vestry Clerk, Hanwell.

'A man in the employ of a friend of mine, whilst trying to dislodge a nest of hornets, was badly stung. After having applied various remedies without success, and becoming seriously ill, your Bee Lotion was applied, and relief was soon obtained. I shall continue to recommend it to the Members of our Association and others.'—Yours faithfully, R. R. Godfrey, Hon. Sec., Lincolnshire Bee-keepers' Association.

'I enclose 1*s.* 8*d.* for another bottle of that excellent Bee Lotion and the carriage of it. This Lotion enables me to laugh at my little friends and their stings.'—C. H. H., in letter in *British Bee Journal*, Vol. V., p. 54.

Price 1*s.* 8*d.* per Bottle, post free.

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Bar-Frame Hive.

Price 10s. complete.

Double walled back and front, Tongued and Grooved Floor-board moveable, Plinths, Porch, Entrance-contractors, Legs, Hinged Roof, Ten Frames, with E. C. WALTON'S Improved METAL ENDS (these Ends are interchangeable with those of Iow, Pine, Edey, or Harrison), and saw-curf down the middle of bar for foundation. Moveable top sides for filling with chaff, cork-dust, &c.; two Spring Dummies, two Quilts, and Crate of 21 1-lb. Sections, with Glass at each end and Separators.

This HIVE has taken First and other Prizes at Lichfield, Doncaster, Oxford, Coventry, Stone, Ledbury, &c., the past two years.

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Foundation. Smokers. Sections.
Feeders. Hives. Veils.
Bottles. Reversible Frames.
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And everything for the successful management of the Honey Bee.

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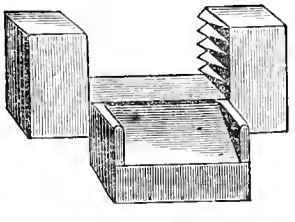

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SECTIONS,

Best quality, 24s. per 1000.

100 SWARMS FOR SALE.

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THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

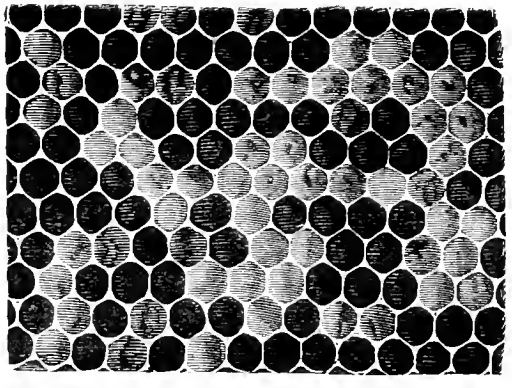
CLOSING OF ENTRIES FOR THE BEE DEPARTMENT AT THE ROYAL AGRICULTURAL SHOW.

Intending exhibitors are reminded that the entries for this Show close on May 12th. The Exhibition this year will be held at Norwich (see advertisement).

FOUL BROOD AND CAMPHOR.

When this disease has visited a district, its eradication is extremely difficult. The germs being scattered far and wide, it is not wonderful that we frequently hear of the disease breaking out again, more especially if we bear in mind, than any one germ, under favourable conditions in a hive, can grow and multiply at such a rate as very soon to completely destroy it. Those who have had foul brood in their hives during the past season, we would recommend them to be on their guard, and take such measures as will ensure the disease not breaking out again.

It is generally in spring that foul brood first shows itself, and then much more difficult to recognise. This is why so many allow it to get to a more advanced stage before they are really aware that they have it in their



hives. When foul brood is tolerably advanced it is easily recognised, as the caps of the sealed brood appear pierced or partly removed, as seen in illustration, and the cells contain a putrid, sticky, coffee-coloured substance, which is all that remains of the sealed larvæ. If the head of a pin be inserted into this substance, it can be drawn out into long threads, and in this respect it differs from chilled brood, in which the remains of the decayed larvæ are watery and not tenacious. Frequently foul-brood may be recognised even without opening a hive. Numbers of bees will be seen at the hive entrance vigorously fanning, and at the same time the air drawn from the hive will have a putrid, nauseating odour, which can be perceived several feet from the hive. The disease should not be allowed to get to this stage, but attacked when it first shows any signs of being present. It requires a careful scrutiny of the combs to recognise foul-brood in its earliest stages, and even then the novice may fail to do so.

On examining the brood, notice must be taken of the larvæ. If diseased, instead of lying curled round at the bottom of the cell, they are generally turned in such a way as to show their backs and move about in an unnatural way. These larvæ, instead of being white, have a slight yellowish tint, which deepens as the disease advances. Those cells containing larvæ, sealed over before they had been attacked by the disease, will be slightly darker in appearance than the surrounding brood, and whereas the capping of this is raised, the diseased cells will be found to be depressed. We must caution the bee-keeper not to expose brood too much in spring. For a minute examination a warm day should be chosen, otherwise the brood may become chilled, and in this way form an active medium for the propagation of foul-brood. The treatment we should recommend is, that by means of camphor, discovered by M. D. Ossipow, a Russian bee-keeper of great experience. This remedy, which we have on several occasions alluded to, and which we described in the *British Bee Journal*, in 1874, is so simple, and from reports we receive from all parts of Europe so efficacious, that it must commend itself to all bee-keepers. It consists in simply placing one or two pieces of camphor, about the size of a walnut, wrapped up in rag on to the floor-board inside the hive. The camphor evaporates slowly, and can be renewed when it has entirely disappeared.

Mr. Cheshire, at page 71, states M. Durand directs attention to camphor as yielding admirable results if the diseased brood be *removed*. There is, however, not the slightest necessity to remove any brood at all, and it is because of its extreme simplicity that this treatment commends itself in preference to such processes as Boutlerow's phenol treatment (lately advocated by Mr. Cheshire), or the simpler treatment by salicylic and fumigation of Hilbert. Mr. Charles Seren, in the January number of the *Bulletin d'Apiculture de la Suisse Romande*, describes how often other remedies had failed, and in a very short time cured with camphor foul-brood in hives where breeding was being carried on, and without the removal of any of the brood. To those who have not foul-brood, or any signs of it, we should still recommend them the use of camphor as a preventative, or

even to do as we do, and never give bees any syrup without the addition of salicylic acid. It has been also recommended by M. Jarie to give bees camphorated syrup, but camphor is not readily dissolved in water, the proportions being one in thirteen, although a little more is dissolved if the water be kept warm.

There is another remedy which was first introduced by M. Klempin, which also appears simple, namely, fumigation with common thyme. No special fumigator is required, but an ordinary smoker can be used. The simple herb as grown in the garden is dried, lighted, and the smoker filled with it. The nozzle of the smoker is then placed in the entrance, and the smoke blown into the hive. This is done every evening for eight days to a fortnight without disturbing bees or brood, after which it is said the disease entirely disappears. Both these remedies, either used by themselves or in conjunction with each other, are simple, inexpensive, and easy of application, and we hope bee-keepers will give them a fair trial. The camphor remedy has already been before the public for some years, and is so simple in its application that the merest novice can do no harm by its use. We therefore recommend all those who have had foul-brood, or suspect foul-brood in their districts, to put a lump or two of camphor into their hives at once, and prevent what they might find much more difficult to eradicate if they allowed the disease to attain its full development.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Committee Meeting held at 105 Jermyn Street on Wednesday, April 28th. Present: The Rev. G. Raynor (in the chair), the Rev. F. S. Sclater, Rev. L. Seager, Captain Campbell, H. Jonas, J. M. Hooker, D. Stewart, G. Walker, and the Secretary.

It was resolved that the Association should be entered in the guarantee list of the South Kensington Show for the sum of 20*l*. The appointment of Judges to act at the St. Ives and Aylesbury Shows was considered, and other formal business transacted.

The usual meeting of County Representatives was held at four o'clock. There were present: C. H. Haynes, Worcestershire; A. P. Lipscombe and J. P. Sambels, Herts; W. de Lacy Atherne, Surrey; J. Bowley, Berks; J. L. M'Clure, Lancashire and Cheshire; J. Kino, Bucks; Rev. W. E. Burkitt, Wilts; J. Garratt, Kent; F. Kenworthy, Middlesex.

The Rev. F. S. Sclater moved, according to notice, that the following be added to the conditions of affiliation:—

'That the affiliation of each County Association is granted on the understanding that the affiliation fee is punctually paid, and the general organization and conduct of business is approved by the Committee of the B. B. K. A., the Committee of the B. B. K. A. having at all times the power to withdraw the privileges of affiliation.'

Mr. Sclater, in introducing his motion, said that he brought forward this motion as the Secretary of a County Association, and his object was to make the affiliation of the counties to the Central Society of more value to the counties themselves; his resolution was intended to enable the B. B. K. A. to take steps when necessary to improve the organization of any county society which could not be said to be doing its work efficiently. The motion having been seconded, Captain Campbell rose to move the following amendment:—

'That the affiliation of each County Association is granted on the understanding that the affiliation fee is punctually paid, and that the general organization is such as may be approved by the B. B. K. A., who have the power to withdraw the privileges of affiliation.'

He said he did so in no hostile spirit to Mr. Sclater, who he was quite sure was actuated by an earnest desire to further the cause which every one present was desirous of promoting. He (Captain Campbell) fully recognised that legislation in the way indicated might be necessary, but he was of opinion that the Central Society should not have the right or power to dictate to any County Association the methods by which it should conduct its business.

The amendment was seconded by Mr. McClure.

The question was discussed at some length. Mr. Garratt was of opinion that the rules of affiliation already gave the Central Society sufficient power to take steps when necessary to improve the organizations of any County Society, and he considered that the resolution was rather, as it were, tightening the hand and giving power for the exercise of parental authority.

The Rev. J. L. Seager supported the resolution. He considered it would enable the Central Society to exercise parental care, and not 'parental authority,' as indicated by Mr. Garratt; and speaking as a County Secretary he felt sure that if the Central Society were called upon to use its powers under this rule considerable benefit would accrue to the county on whose behalf it was exercised.

Mr. Sambels was opposed to the resolution.

Mr. Stewart, in supporting the resolution, considered that the discussion had wandered somewhat wide of the mark and that in the discussion the policy of the Central Society and the results of that policy had been overlooked. It must be remembered that it was the aim of the B. B. K. A. to establish in every county a well-organised County Association and to impress upon the Counties the necessity of arranging a good district system of working those counties. All this was done at considerable expense to the Central Society; not only were funds expended to carry out this work, but the B. B. K. A. lost many of its members who became members of the County Associations. Under these circumstances it was not at all probable that the Central Society would take any steps under this rule, which would tend to injure the bee-keeping cause in any county.

Mr. Walker also supported the resolution. A letter was read from the Secretary of the Essex Association, who was unable to be present, in favour of the resolution.

On a division the amendment was carried by six votes against two.

THE GREAT NATIONAL SHOW AT SOUTH KENSINGTON.

The Secretary reported that assistance had been promised from the counties of Herts, Berks, and Bucks, the two former counties had promised a donation of 2*l*. 2*s*. each.

Mr. Sclater reported that the Bucks Association had taken steps to collect individual subscriptions amongst its members, and at present nearly five pounds had been realised.

Captain Campbell reported that a similar plan was being adopted in Surrey, and he was in hopes of being able to realise nearly 20*l*. towards the fund.

Mr. Garratt considered that the prize list should be published as early as possible in order that the County Associations and individual exhibitors might be enabled to make the necessary arrangements to enter into the respective competitions.

The second quarterly Conversazione of the year was held at 6 p.m., when amongst the company assembled were Dr. Walker, Mr. Stewart, Captain Bush, the Rev. W. E. Burkitt, Mr. Sambels, Mr. Garratt, Captain Campbell, Mr. Hooker, Mr. Haviland, Mr. Andrews, Mr. Daintree, Mr. Kenworthy, Mr. Henderson, &c.

Mr. Sambels, on being called to the chair, said that several new inventions relative to bee-keeping would be exhibited and submitted to the meeting, whose opinion would be invited thereon. First of all he would call on Dr. Walker to give some account of his Zulu Queen.

Dr. Walker exhibited a crate in which rather more than a pint and a half of bees had been conveyed from South Africa to this country. He stated that they had borne the journey very well, and arrived in England in a satisfactory condition. There was nothing new to bee-keepers in the formation of the crate, and nothing worthy of special mention except that there was a good contrivance for giving the bees water. That was a most important matter, for the greatest obstacle to be encountered in sending bees on a voyage was the difficulty of supplying them with water. A very good system had been adopted in the crate before them. An ordinary sponge was fixed outside, which could be saturated from time to time, and the crate had been so built that the moisture therefrom would run inside, and if there was any excess arrangements had been made to carry it off. He had been very unsuccessful as regarded the queen, and he hoped for a different result if Dr. Stroud should send him another. It was a difficult matter to introduce a queen in the early part of the year. This one he had introduced by caging in the ordinary way, but he ultimately found her dead. Probably he would have been more successful if she had arrived about the end of May, for the young bees took to a queen much more readily than bees which had been hibernating during the winter.

In reply to Mr. Stewart, Dr. Walker said that all the apparatus for supplying water could be manipulated from outside, and that the only improvement he could suggest in the crate would be that at the bottom of the hive there should be a sliding drawer, so that there would be greater facility for removing dead bees and *débris*. The drawer might be made of perforated zinc. He was sorry he did not bring the African bees with him, but on a future occasion he would be happy to exhibit them. They were something like Ligurians, having fine gold bands, but were a much smaller species. A full description of them would be found at page 188 of the *British Bee Journal* for the 29th April. They were regarded as prolific bees, very good honey gatherers, and he would be glad to see them introduced into England.

The Chairman was glad to see the contrivance, and invited the company to examine it, as they would not fail to learn something in regard to the proper formation of a travelling hive.

Mr. Hooker, Mr. Garratt, and others commented favourably on the exhibit; and in answer to questions, Dr. Walker explained that there were proper arrangements for ventilation by a slide at the bottom, and that no doubt the hive was slung during the voyage.

The Chairman said he noticed that handles were provided, which was most important in the case of a travelling hive, and was a matter of detail which was often forgotten. The members present were exceedingly obliged to Dr. Walker for the trouble he had taken to show them the hive, and he hoped that he would be more successful on a future occasion with his African queens, which might lead to the introduction of the Colonial bees into English apiaries.

Mr. Septimus Allen produced samples of glass sections, the advantages of which, he thought, must be apparent to most bee-keepers. They were blown as experimental sections, but in the case of a quantity being wanted, a block would be made, so that they would be pressed. The opening in the top for putting in the foundation was sawn out or ground out, but in the case of the glasses which were pressed, the hole would be formed in the pressing. He was aware it was occasionally said that there was a probability that the bees would not work up into the sections on account of the smooth surface of the glass. He, however, contested this dictum, and was quite prepared to have a few more made and put in use, when he prophesied they would be filled as fast as could be desired. The advantages of these sections were that they could be easily packed, and there was far less chance of honey being lost than in the ordinary wood sections. Besides that, they would make an attractive object on the breakfast-table, and for that reason would ensure a higher market value than the wood section.

Mr. Garratt and Mr. Hooker believed that the glass sections never could replace wooden ones, because of the extra cost in producing them.

Mr. Allen pointed out that they could be filled over and over again.

Mr. Stewart thought they were a repetition of the principle of the old bell glass, and were defective in ventilation, owing to which the confined heat would very likely cause suffocation to a good many bees, or the moisture resulting therefrom would in some sections cause mouldiness, and deter the bees from working therein. He was decidedly of opinion that the bees would lose a great deal of time in climbing over a smooth surface. Besides, in those glasses, the bees could not pass from section to section as in the case of the wooden ones, and some time would be lost in going in and out.

Mr. Garratt quite agreed in Mr. Stewart's remarks with regard to the isolation of the bees in each section. He would like to know how the bees could finish off their work at the bottom. Mr. Allen had not shown that there was any provision for attaching it to the bottom. In these practical days of bee-keeping they found it was desirable that the sections should be attached all round to give greater firmness in travelling. Then, again, it seemed to him that the method of taking the honey from the glass was a very awkward one—only by digging at the contents with a spoon.

Mr. Hooker did not think there was much ground for complaint against the glass on the score of ventilation. He had used bell-glasses with the zinc tube, and had always found that the bees stopped up the holes in the tube. With regard to foothold, he thought a line of wax would give them a ladder way up at all events, and if there was no other difficulty to encounter than the mode of taking the honey out of the sections, that was a matter that could be easily got over.

The Chairman was of opinion that these sections would suit a class of fancy consumers, who would be led to purchase by attractive appearances. There were many disadvantages connected with glass sections. Glass afforded the worst kind of foothold, and the matter of moisture would also give trouble no doubt. Then the loss of time in getting from one section to another was a matter of great moment to the producers. Still, as practical men, they must not lose sight of the fact that there would be a market for those sections probably at increased prices, owing to their prepossessing appearance, and if they were placed on wooden bars he had no doubt the bees would finish them off quite as well as they did the ordinary wood sections. He could call to mind customers in his own neighbourhood who would be likely purchasers. There was also the advantage that after being emptied they could be returned for refilling. He wished Mr. Allen could bring a crate with twenty-one of them nicely filled, the bees performing this work in about eight or nine days, when the members would be better able to form a judgment of the merits of the glass section. He thought that a manufacturer having made his moulds and started in the manufacture of the glasses, would not charge much more than the price of 1-lb bottles. He invited the meeting to express its opinion on the section, which no doubt would have great weight with the Committee of the B.B.K.A. The question was whether they really

thought the article one of practical utility to bee-keepers?

Mr. Meadows (Leicestershire), Mr. Hooker, and Mr. Stewart, offered further suggestions and comments on the exhibit.

Mr. Andrews said his experience was to the effect that bees could stick their combs to sides of glass just as well as to wood.

Mr. Allen having replied, a show of hands was called for, and the meeting declared by a majority of six its opinion against the utility of Mr. Allen's exhibit.

The Chairman said he trusted, in spite of the adverse vote of the meeting, that Mr. Allen would not be deterred from pushing his project in the market.

Mr. Meadows (Leicestershire) exhibited an improved extractor invented by Mr. Raynor. He said that the principal features of this contrivance were that the comb was very easily reversed, that it was impossible for it to bulge, that the whole apparatus came to pieces without any trouble, and was very easily cleaned. It was strong and well made, and would extract two combs at once.

The Chairman, Mr. Hooker, and Mr. Garratt, commented favourably on the apparatus, and ultimately the meeting expressed its opinion by a large majority in commendation of the extractor.

Mr. Meadows then exhibited Dr. Ray's 'Melpel,' which he said had been before the public for some time. The great drawback in articles of that sort was their complication, as they usually consisted of too many parts. The one before them was an exception to the rule, and would extract three 1-lb. sections or two 2-lb. sections.

Messrs. Garratt, Hooker, Stewart, the Chairman, Andrews and Haviland, were generally of opinion that no objection could be offered to the instrument, except that it was unnecessary, for where extractors for frames were in use by bee-keepers there would be no occasion for the Melpel, because the large extractor could always be so manipulated as to extract sections; and therefore it would not be wise to incur expense in multiplying useless bee-gear.

Mr. Meadows said that the cost of the apparatus was only 5*s*. 6*d*.

On a vote being called for, the meeting expressed disapproval of the Melpel, not of its merits, but of the desirability of recommending bee-keepers to purchase it.

Mr. Meadows then exhibited a feeder. He did not claim any credit for novelty in regard to it, but only put it before the meeting as a very cheap and serviceable article. It could be supplied with a bottle at one shilling.

After a few remarks from Messrs. Garratt, Hooker, Andrews, and Bush, the meeting unanimously expressed approval of the feeder.

Mr. Meadows then exhibited two improved queen-cages which he contended were well and cheaply made. There was nothing new in their design, and he only wished to show them to the meeting without specially seeking for an expression of opinion in regard to them.

Mr. Henderson exhibited a new fumigator, which had been invented by Mr. Webster, a frequent correspondent of the *Bee Journal*. A full account of the instrument and its action appeared at p. 189 of the last number of the *Journal*. He (Mr. Henderson) had asked Mr. Webster whether the fumigator would quell those bees which were not susceptible to the effect of smoke. Mr. Webster had replied: 'I am more than satisfied of its efficacy, and have, since writing, tried its effects upon some exceedingly vicious lots with results far superior to smoke.'

Mr. Garratt would like to know whether carbolic would have any effect on the honey-comb.

Mr. Meadows stated that he in conjunction with another gentleman had considered the matter of fumigation, and were about to introduce a system.

Mr. Andrews asked whether bees would get rid of the fumes of carbolic as quickly as of brown paper or tobacco.

Mr. Haviland thought it would be premature for the meeting to express an opinion on the fumigator while so little was known of the effect of carbolic fumes.

The Chairman, Captain Bush, and Mr. Stewart thought that if carbolic were used, it should be carefully diluted.

Mr. Henderson said that it would not be desirable at the present time to express any decided opinion on the subject. He had brought the fumigator to the meeting as a novelty in bee appliances. He could have wished that Mr. Webster had been present to describe his own invention.

Mr. Stewart moved and Mr. Hooker seconded a vote of thanks to each of the exhibitors, which was carried unanimously.

Mr. Meadows thanked the meeting, and said he was always glad to have the opinion of practical bee-keepers, whether for or against his appliances, and quite apart from commercial considerations.

Mr. Allen also responded to the resolution.

Mr. Garratt proposed and Captain Bush seconded a vote of thanks to the Chairman, who briefly acknowledged the compliment, and the proceedings terminated.

A SOMERSETSHIRE B.K.A.

A local branch of this Association has been formed at Taunton. A meeting of bee-keepers was recently held in that town, when Mr. Searlett, Mr. H. Maynard, and Mr. B. Maynard were elected local Committee, with Mr. C. Lewis, Fore Street, Taunton, as local Secretary.

Permission was obtained to hold a show in connexion with the Horticultural Exhibition on August 12th, and a prize list was drawn up and a fund started.

SOUTH KENSINGTON EXHIBITION.

Additional subscriptions to the Guarantee and Donation Funds:—

Amounts previously announced	£104	10	6
British Bee-keepers' Association ..	20	0	0
Rev. G. Raynor	1	1	0
Bucks Association to present date ..	5	0	0
	£130	11	6

ITALY.

Our Italian contemporary, the *Apicoltore* of Milan, publishes the list of the exhibitors to whom prizes were awarded in the 'Products' section of the Bee Show lately held in that city. The following are a few of the most familiar names appearing in the list, with particulars of their respective exhibits:—The Very Rev. Don Cirillo Girotti exhibited an interesting collection of beautiful honey obtained by his bees from various kinds of blossoms, several samples of beverages and articles preserved in vinegar made from honey. Prize: the large silver-plated medal. Signor Giovanni Grammatica: Besides his thirty pots of honey and other sundry exhibits, his *pièce de resistance* was a coat of the royal arms worked in wax. Prize: the large silver medal. Signor Giacomo Bertoli of Varallo, Sesia, whose well-noted Ligurian bees were so much admired a few years ago at South Kensington Bee Show, exhibited his well-known honey from Monte Rosa, and an Alpine flora. Andrea Tartuferi of Falbriano, was honoured with the gold medal for his unsurpassed display of honey, wax, liqueurs, and wines flavoured with honey. Signor Eusebio Pin contributed a large quantity of Alpine honey of exquisite quality, and was awarded a large silver medal. Altogether the number of prizes distributed in this section was twenty-five.

PROPERTIES AND CHARACTER OF HONEY AND TABLE HONEY.

The present day has been rightly called the 'age of adulteration.' In fact, we can hardly consume any article but we find it adulterated. Is it therefore wonderful that analysts become indispensable functionaries in cantons and towns? Soon, even the smallest villages and hamlets will also have their own analysts. How do we stand in this respect with regard to honey, which is one of our most valuable and remunerative agricultural products? No breeding of cattle realises a profit of 60 to 70 per cent, as do bees to their intelligent cultivator.

First we ask: What is honey? Whence is it derived? What is artificial honey?

Honey is far from being only the simple nectar collected by bees from innumerable flowers, it is rather a delicate and complicated production of the body of the bee. So far as conscientious chemical analysis has shown, honey deposited in the cells by bees consists of no less than twelve substances, namely, water, cane-sugar, grape-sugar, fruit-sugar, gummy substances, albumen (digested and capable of coagulation), fat, formic acid, lecithin, volatile oils, ashes, and saliva. This last is secreted by the salivary glands, and mixes, first in the mouth, then in the œsophagus and honey stomach with the nectar collected by the bees, which is thus converted into honey. In this laboratory of the honey-stomach the cane-sugar and the gummy substances are transformed into invert sugar (a mixture of grape and fruit-sugar), as well as the albumen is digested. The beneficial action of this ferment continues in the honey cell; and this is the reason why old honey, having an equal proportion of water, is richer in sugar than new honey. The honey receives the albumen in the stomach of the bee. This substance is not found in the nectar collected from the flowers, at any rate if it does exist, it is not in so suitable a form for nourishment. The formic acid, represented in so minute a quantity, plays an important part in the preservation of honey. According to the observations of Dr. Müllenhof, of Berlin, before sealing the cells the bee turns round and by means of its sting injects a minute drop of poison, which is formic acid. Other bee-keepers maintain that the formic acid present in the hive in the form of vapour is absorbed by the honey, and is thus introduced before the sealing over of the cells. It is a proven fact, that formic acid is always found in pure honey. This abundance of nourishing substances explains the usefulness of honey for the nourishment of the queen, who, doubtless, lives principally on honey, and lays on an average 300,000 eggs a-year. It is for the same reason that workers can live notwithstanding the enormous waste of their bodies, and that honey is of such value even to man.

Respecting the physiological and medicinal properties of honey, in an article by M. Theiler in the special catalogue of the National Exhibition, the following extract from Dr. Hurlimann appears:—'Honey is not a universal food like milk and meat; it is nevertheless an important nutritive substance. Honey is especially distinguished for its easy digestibility, for it passes directly into the blood without any change or transformation, and becomes a powerful producer of heat.' This important property justifies its use for the table as well as in the treatment of invalids.

Pure honey gathered in the plains and mountains of Switzerland is of an exquisite quality; this is why it has up to the present time enjoyed a good reputation and realises high prices. It is therefore not strange that attempts have been made to imitate this article by artificial means, and to manufacture and adulterate it in every way. America stands at the head of this industry, France and Germany worthily follow, and even Switzerland is not far behind.

Table-Honey.

This is the grand word to which the following remarks apply, and against which we declare war to the knife, the more so because our petition with upwards of 200 signatures, which made the modest request for the substitution of the name *artificial honey* for *table-honey*, failed in its object. But now we do not wish to have even this name. Neither table nor artificial honey has any right to be called honey. We know only one honey and that the produce of the bee. All the imitations do not merit any other name than syrups. In this respect we share the views of the courageous and valiant champion of honey, Dr. Stautner, the editor of the Munich *Bee Journal*.

What is Table-Honey?

Table-honey, synonymous in Germany with artificial honey or Swiss honey, is an artificial product, in the manufacture of which enter, in varying proportions, honey (mostly derived from abroad and of inferior quality), glucose, and treacle. This mixture is manufactured in factories to which admission is generally excluded to all except those interested. But how are we to distinguish honey from artificial honey? It can be done both chemically and mechanically.

1.—Chemical Process.

We determine the quantity of grape-sugar contained in the honey, first in its ordinary state, then after having boiled it with a small quantity of sulphuric acid or hydrochloric acid. After this process we shall discover a great difference between natural and artificial honey. It is thus that the amount of grape-sugar in honey before boiling, compared to the amount of this sugar after boiling with one or the other of these acids, only gave a difference of 8·33 per cent of grape-sugar, whereas the difference in the manufactured article rose to 45·28 per cent. The difference of grape-sugar therefore contained in pure honey and artificial honey is 36·95 per cent. These figures are significant. The increase observed in artificial honey is due to dextrine and cane or beetroot sugar (saccharose). Naturally such a process of analysis does not give the exact quantitative determination of all the different constituents of the mixture, it is, however, sufficient to enable us to judge of the substance with which we have to deal. The only method by which we can make an exact quantitative analysis is given in the excellent work of Dr. Sieben of the Soxhlet Laboratory, in Munich, in 1884. (*Zeitschrift des Vereins für die Rübenzucker Industrie des deutschen Reiches*, August, 1884.)

2.—Mechanical Process.

This process is exceedingly simple, and can be carried out at any time and anywhere by any housewife. Mix in a flask about two tablespoonfuls of honey which is to be examined with six of alcohol (failing which, brandy or spirits of wine will do). Shake the mixture well. After allowing it to rest a short time, we find in table-honey a thick white precipitate, which is not found in pure honey. This will dissolve in spirits of wine. If the honey is granulated or thick, it should be dissolved by heating and adding an equal quantity of water to it. Another method of analysis recommended by Dr. Ambühl of St. Gall, is based upon the reaction of colours by means of tincture of iodine on dextrine, a constituent part of glucose in artificial honey. (See the *Schweitzerishe Bienenzeitung*, October, 1885).—The President of the Swiss Bee-keepers' Association.

(To be continued.)

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PLANTS FLOWERING IN MAY.

[303.] The following bee flowers will bloom this month:—Broom, bird cherry, hawthorn, and holly; fruit trees, viz., apples, pears, plums, cherries, raspberries, limnanthes, wallflower, barbary, furze, horse-chestnut, maple, &c.—Hy. Dobbie, *April 26th*, 1886.

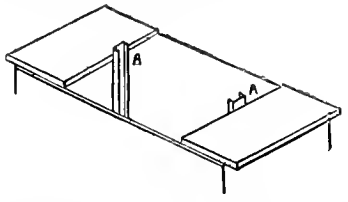
WEBSTER'S NEW FUMIGATOR.

[304.] Owing to the numerous applications I have received as to the manner of using and agent used in my invention, the above appliance, perhaps you, Mr. Editor, will kindly grant me space for a description of the same. For two seasons I had observed the effect of carbolic acid upon ordinary blacks and Ligurians, and had used the same, as many others had, when removing sections; it occurred to me that the acid could be utilised in every description of manipulation; in the end I succeeded quite beyond my expectations. Up to this time I had been experimenting with ordinary English blacks only, and found that the mixture of one part carbolic (Calvert's No. 5) to four parts of water and a little glycerine was superior in its effects to smoke, while the great advantages of the fumigator over the smoker was a continued source of satisfaction to me, and I used it in its perfected condition on all occasions this season, which were very frequent. I then sent one to Mr. Cheshire; my spirits being rather damped when I received a communication from him that it was very effective with ordinary colonies, but with very vicious ones it was of little use. He at the same time advised me to try another agent. This I did; and scouring the country for exceptionally irritable lots, I found the effects upon them was astonishing. While emptying a hive, the gentleman who had charge of them said, 'If you had used smoke they would have been round you stinging you wholesale.' They packed themselves like herrings in a barrel, with their heads in the cells gorging. I had at this time no Eastern bees, only blacks and Ligurians; but Mr. Cheshire having plenty of Syrians and Cyprians, he made further experiments, and found that by an alteration in the agent these were, using his own words, utterly subdued. To Mr. Cheshire alone belongs the honour of discovering an agent for subduing the irascible temper of these little 'savages.'—W. B. Webster, *Wokingham, Berks.*

SIMMINS' UNCAPPING MACHINE.

[305.] Referring to Mr. Meadows' communication, I must say he appears to have lost sight of both the efficiency and simplicity of this machine. The additional frame suggested by the editor as being desirable, is not needed, because the implement as completed last autumn meets every requirement. A frame-work to hold the comb is absolutely neeessary in a machine with only a single knife like Zorzi's, but with my own having a double action, and uncapping both sides of a comb at one operation, such a complication is not only unnecessary, but superfluous, as the guides arranged between the knives at either end to take the end rails of the frame are all that are needed. With a forefinger and thumb on each projecting ear of the frame of comb such can be passed through more quickly than it will take to fasten the comb into any additional frame-work before proceeding, without considering the removal and reversing of the same.

By referring to the illustration given on p. 154, it will be seen that the guides could not very well be shown in photo taken to obtain same, though the engraver made some attempt to bring them into view. The accompanying sketch will explain their position.



Another advantage in my machine is, that no damp cloth is needed, because of the peculiar construction of the knives which only require cleaning when finished with for the day. With regard to obtaining perfectly even combs, I did not, like the editor, come to the conclusion that such would always remain so. As a matter of fact, experience has taught me that they will not continue sufficiently even to work with double knives, and therefore, to enable one to take the fullest advantage of this, the more rapid process, the combs must be built out between dividers, for which the first cost is trifling, compared with the rapidity of manipulation given ever after.

I may say that the machine was first put in hand in the spring of 1885, and brought to its present state during the autumn of that year, when it was used successfully. I have recently been somewhat surprised to find (*American Bee Journal* for March 24th last, and fuller illustrated description lately given in *B. B. Journal*) that another bee-keeper had been working upon almost the same principle; but for simplicity and rapidity, I believe my own machine will be found more serviceable than that of Count Zorzi's.—S. Simmins.

BEST SIZE SECTIONS FOR GENERAL USE.

[306.] Although knowing that most bee-keepers prefer, or rather use, $4\frac{1}{4} \times 4\frac{1}{4}$ one-pound sections, I am very glad to see the remarks of A. T. Wilmot in favour of $4 \times 4\frac{1}{2}$. No doubt it is a pity that a standard size cannot be agreed upon to suit all bee-keepers; but from the fact that a standard-sized frame has already been adopted, and that the $4 \times 4\frac{1}{2}$ section exactly suits that frame—whether in super crates on top, or in section frames in the body of the hive, or both—a way very much advocated when working chiefly for section honey—I think it would be a still greater pity for the British Bee-keepers' Association to adopt a Standard section which would not suit their Standard frame.

When the Standard frame was agreed upon, some few years ago, I altered all my hives to suit it, and any new ones I have since got were not only the same, but provided with section supers and section frames to suit the $4 \times 4\frac{1}{2}$ size. I am now wanting a lot more new hives, and feel A. T. Wilmot's dilemma to be my own; not knowing whether to have supers made to suit the sections I now use or to alter those I have in use- discard section frames altogether from the body of the hive and go in for the $4\frac{1}{4} \times 4\frac{1}{4}$ sections now so generally in use. I would not think of using two sizes of sections in the same apiary, no more than I would two sizes of

brood-frames; but if I thought that I could continue to be able to get 4 × 4½ sections in future years, at an equal cost, I would most certainly continue to use them.—W. J. TURTLE, *Tandragee*.

SIZE OF SECTIONS.

[307.] In answer to the numbered objections (277, page 176) raised by Mr. A. T. Wilmot against the adoption of 4¼ × 4¼ sections, I beg to submit the following replies:—1. The 4¼ × 4¼ will fit the standard size hive by adopting a broad frame as always used; this is absolutely necessary if you desire to keep your sections clean.

2. A rack holding twenty-one 4¼ × 4¼ sections will cover the standard frames if placed with the rows of sections running across, even when placed the reverse two strips of wood or quilting will prevent the bees ascending into the roof of hive.

3. By having a lift cut from a 9-inch plank sufficient room will be found, as in all hives there is a certain amount of spare space in the roof for packing, &c.

In reply to the presumed advantages of the 4 × 4½ sections of Mr. A. T. W.:

1. There being no alteration required in hive there is no expenditure; as to economising the heat can it be possible for a quarter of an inch to make any perceptible difference?

2. There is no advantage whatever here, as you can see at once which is top and bottom of any section, 4 × 4½ will require as much examination to see which is the top or which is the bottom as the 4¼ × 4¼, and as a matter of course will take as long packing as each other.

3. Quite a matter of individual opinion; a square block of honey will fit a round dish I should say better than an oblong one, and most tea or breakfast dishes are made round.

I am strongly of opinion that the 4¼ × 4¼ section ought at once to be adopted as the standard section, ninety-nine out of every hundred bee-keepers at the present time use that size for pound sections, and have their racks made for that size. We must move with the majority, and those very few bee-keepers who use the 4 × 4½ by a very slight expenditure could gradually introduce the 4¼ × 4¼ into their apiaries.

There is no doubt in my own mind that back supering will become before long a thing of the past. I am quite certain that if any bee-keeper desires to make a big return at the end of the honey season—and who doesn't?—he will have to double; if he makes a commencement there will be no going back to the now rapidly becoming obsolete back supering.—W. B. WEBSTER, *Wokingham, Berks*.

SIZE OF SECTIONS.

[308.] In your last issue A. T. Wilmot wishes to know the objections to 4 × 4½ sections. There is only one—they are not quite so generally used as the 4¼ × 4¼. There is not one advantage the 4¼ section possesses which the 4 × 4½ does not, but there are several the latter possesses over the former, as your correspondent shows. If the British Bee-keepers' Association should adopt one as a standard, surely it will be the one to fit their Standard frame. I cannot conceive of them doing otherwise, considering what they adopt now will probably be for future generations. The *Bee Journal* used to recommend the 4 × 4½ section; now they appear to recommend the 4¼ × 4¼. Why is it? Nearly all the bee-keepers in my district use the 4 × 4½. I have started between twenty and thirty with them this last two or three years. A. T. Wilmot will always be able to get them from Abbott Brothers, Southall.—JOHN BULL.

STINGS AND GLOVES. [298.]

[309.] 'A Cottager' asks for the experience of other bee-keepers, and, as one who can sympathise with your correspondent, I would beg to offer a few remarks. I have had one skep in my possession which contained hybrids, and whenever I meddled with them they attacked me furiously; while I have a bar-frame containing blacks which rarely ever show their temper in such a manner. Without a doubt I suppose we may conclude that hybrids are more fierce than blacks. To come to the subject-matter as to when 'Cottager' would become so inured to stand any amount of stings with impunity, I would say that is a difficult question to answer. Some—and I am one of them—never would be inoculated to such an extent as to make them what one person once told me he was, 'bee-proof.' Why it is I do not know. I know a bee-keeper of some twenty years' experience, I know another of some five or six years' experience, and another of three years' experience. Now these three will tell you that, though they are not timid when manipulating their hives, they would much rather not get stung. And why? For the simple reason that they swell up so dreadfully as to make the pain of a sting almost unbearable. As to the oldest of the three he tells me that one out of about every nine stings causes a swelling. Why is this? Is it because the ninth bee happens to sting his flesh close to an artery? As to myself only a fortnight ago I was stung very badly, I had just finished wrapping my bees up—it has been very cold here—when one little rascal thought 'he had had enough of this world,' I suppose, and would not work for such a monster as me, and so gave me a taste of his fury by stinging me in the centre of the forehead. I took no notice of it that night, but, lo and behold! the next morning my forehead was swollen and very painful. Nothing daunted I went out, but it gradually got worse, and by mid-day it was so bad, and had descended into my eyes, that I was obliged to lay down the rest of the day. I may say the night previously I applied the old remedy of putting some blue over the sting.

Well, to continue my tale. My head got very hot, and the whole of that afternoon I was nearly distracted. I was advised all sorts of remedies, and I may tell your correspondent confidentially, I tried most of them, but with little effect. At last, my eyes being nearly black, my friends induced me to have a bread poultice on, and this cooled my temples wonderfully; it gave me much relief, though it did not reduce the swelling. On the following day the swelling had not decreased, though it was less painful, and I could tell I had borne the worst of it. To end briefly, I would inform 'Cottager' that in three more days I was myself again. My work lying out and about the town, I was asked by more than one, 'who the fellow was that gave me such a dressing?' and this, perhaps, was a little the worst, as it was put down by many friends that I had fallen out with 'the brewer.' As a rule I wear gloves and veil. I didn't in the earlier part of my bee-keeping, but, as I have explained above, I swell so much when I do get stung that I am obliged to. As to my being inoculated, I do not believe I ever should be sufficiently to stop all swelling. I had eight stings in about two months last year, and the eighth, which was on my leg, paid me out as much as the first.—E. F. H., *Oxford, May 1st*.

STINGS.

[310.] 'A Cottager' asks, 'Could an old bee-master with impunity stand forty or fifty stings?'—Yes, ten times the number. Last autumn I had taken a lot of bees and left them on their stands. Being detained, it was dark when I got to the last place to remove them. I had been working during the day with my coat off, and my shirt-sleeves rolled up, and had put on my coat without troubling to turn them down. When I poured

one lot of bees into my box, before I could close them in they boiled up and ran up my hands and arms, inside my coat stinging all the time. As I had to drive two miles, groom my horse and bed him down, have supper and a long chat with my host, a bee-keeper, it was three hours before I got to bed, and all that time the stings were in my arms. I can truly say that there was not a single square inch from my knuckles to my shoulder-blades without a sting or more. *Moral: Never (if you can avoid it) handle bees after dark.* The next morning I was frightfully stiff. But as I was bound to finish my round of bee-taking, I set to work, and in the course of a few hours the stiffness went off, and I felt no ill effects.

I am quite sure bees, in general, are more irritable than ten years ago. In 1875, 6, 7, I used to go bee-driving and never took a veil with me. I should be sorry to do so now. In remote country places, far removed from any advanced bee-keepers, I seldom see a stock which does not show signs of a remote cross with yellow blood. These hybrids arising from black queens mating with Ligurian drones are far more irritable than those arising from Ligurian queens mating with black drones.

'A Cottager' asks what an old hand would have done when attacked as he was. I should have thrown the quilt over the bees, smoked them freely, and sprinkled them with thin syrup. The cause was probably that all their stores were sealed, and so they had no opportunity of gorging.—F. Lyon.

HIVE DESERTION.

[311.] That the desertion of a hive by bees at this time of year, as stated by one of your correspondents, being due to shortness of stores, I think there can be no doubt. A case has just occurred in my apiary of which I was witness. The stock was weak, but it was being regularly fed, yet about midday it left the hive, and entered another weak hive at the other end of the apiary. Curiously enough the queen at the head of this invalid stock I had just discovered to be a drone-breeder. Is it in the least possible that scouts from the first hive would have discovered the condition of affairs in the second hive?—E. W. P.

DOG AND BEES.

[312.] I beg to tell 'Amateur Expert' that my old hen hatched that pumpkin into what is called a 'squash,' and that she did so in spite of sundry drippings meant to stop her 'incubatory proclivities.' As 'A. E.' has read my letters in Norwich papers, I may also tell him that my dog 'Rough,' who so hated the hum of a bee, died of extreme old age: I trust 'A. E.' may do the same. 'Rough' has been followed by a dog of other tastes. He's as bad as the idiot bee-boy at Selborne, only he's not an idiot: he's a most intelligent dog. Sometimes he carries hay from one stall to that in which his favourite 'Angelina' (my pony's name) lives. He pulls down her halter from a hook high up on the wall and tries to put it on her. But bees! oh dear! I quite fear about him at swarming time. He takes them with a fly-shot. How he avoids the stings I don't know. He seems to me to know that the insects *have* stings. Those bees crawling on my hearth he touches gently with his lips, and then, raising his lips, he seizes them with his teeth only. I think of getting him 'special permission' to enter the bee tent, 'just to show 'em how it's done.' He has one dodge I never saw in any dog before—I throw a stick high up into the air; he cannot tell rightly which way it is going, so he spins round like a wheel on its axis, and in a second of time surveys the surrounding space and marks the direction. The dog is a thorough-bred Irish terrier, born last July. I've just told him what I've said, and he takes it quietly.—J. Lawson Sisson.

WASPS.

[313.] May I have the use of your *Journal* to ask if your readers find the wasps in extraordinary numbers this year? I have never known them so numerous. I killed to-day, April 28th, 8; 27th, 22; 26th, 17; and on the previous week, about 30. They were all found feeding on thirty-six gooseberry-trees in my garden.—John B. Riky, *Bayborough Rectory, Taunton.*

QUEEN WASPS.—A CAUTION.

[314.] The other day I observed several wasps flying around and settling on one of the pear-trees in my garden. I knocked down a few, but finding that they increased in numbers I had a net made similar to a naturalist's butterfly net, and on Friday evening last in about two hours had caught sixteen of them. On Saturday I caught fourteen more, thus making thirty queens destroyed in less than twenty-four hours. If every bee-keeper will keep a look-out *now* and destroy as many of the pests as possible, we shall be freer from their attacks on our hives in the summer and autumn.—H. Coleby, *The School House, Wargrave, Henley-on-Thames.*

REVERSIBLE FRAMES.

[315.] There is an air of refreshing simplicity about the letter of your correspondent, 'W. Chitty,' in this week's issue. He has invented a reversible frame, which is to eclipse all others! But it violates one of the elementary principles on which bar-frame hives are constructed, viz., that *the combs shall be supported from the top, and shall not touch either sides or bottom of hive,* lest in replacing, bees, or perhaps even the queen herself, should be crushed. I imagine 'W. Chitty' has had no experience with his own frames. He claims the 'sole right of their manufacture,' and I venture to say that 'his right there is none will dispute.'—Robert S. Latimer, *The Manse, Willingham, R. S. O., Cambs.*

FLOWERING HEATH.

[316.] Some of your readers may not know of a very useful spring flowering heath, which I am told is the *Amena carnea.* I have large quantities of it here, so I can speak of it from experience. It grows very freely, and yields large quantities of pollen just when that is most wanted.—E. J. Brook, *Ecclefechan.*

HOLIDAY NOTES AT A WELSH WATERING-PLACE.

Bee Pasturage.—Mr. Simmins' new Book.

[317.] Coming from the Midlands only a fortnight ago, where a few pear and plum-trees showed a venturesome promise of bloom, the hum of bees among orchards of apple in full blossom is a delightful change. The business-like work of the bees is infectious, and induces a sturdy application of pen, or in this case pencil, to paper, with a determination to have a regular good bee-shot. The three-volume novel and the Home Rule scheme, with its surroundings of magnificent speeches, alike pall, and one turns with delight to the charm of the season, which at this early date, 29th April, has produced the note of the cuckoo and the cornerake, and the twitter of the swallow, and, above all, the happy *honey hum* of the bee. The buzz round the pea-flour skep, which this year, owing to the total absence of flowers, had to be resorted to once more rather against the grain, for pollen-bound combs are a nuisance; the buzz round such an artificial arrangement has a different sound from the pure honey song. And the banks in the lovely district near Aberystwyth are in places covered with primroses within a hundred yards of the water's

edge on the seashore. The resident bee-keeper here is a happy man. The somewhat rugged and bleak appearance of the mountains is lit up on closer inspection with numerous spring flowers. Wild strawberry is plentiful, and banks and ridges of golden gorse abound everywhere. In fact, the latter has to be kept in bounds by being set on fire, and one evening lately one side of a mountain looked like a volcano might do, hidden in fire and smoke. But the valleys are the charm. Wild cherry, wild apple—crab, I suppose.—and blackthorn, make the hillsides white. There ought to be more bees kept in this neighbourhood to reap the wasted harvest. That is the fact which strikes one after search and inquiry, 'Do you keep bees, and why not?' After that philosophical reflection I turn to the bee literature I have with me on this pleasant hill-side, the sun as warm as July. I am told that in spite of the hard winter, which has swallowed up some 30,000 sheep, and which is remembered in the price of mutton, snow never lives more than a day or two in this locality. The 'Useful Hints' are always eagerly scanned by me, and, I should imagine, by all bee-keepers, for the man who cannot be told anything new is often left in the cold. But this time it is not in the *B. B. J.* that the best tips occur, but in the new book of Mr. Simmins. New?—well, a month old. Having skimmed it through I lent it, but only had time to study it now. And it is study it wants to get the full good out of it. This reminds me it is to Mr. Simmins that I owe peace of mind in leaving a score of stocks at this critical time, for the honey harvest battle is fought *now*, and not in July. The dry-sugar feeders, stored with 6 lbs. each, and one at each end of hive, will keep stimulation going till an inspection can be made next week. But the literature and the study of it, apart from *the* plan, the system of working for extracted honey, is most worth careful reading. Mr. Simmins might know the difficulty under which I have invariably found myself, in spite of a greedy devouring of all things appertaining to bee-culture in the English language, whether in English or American Bee Journals. Doubling was successfully accomplished, and fair yields of honey obtained (say 40 to 80 lbs.), but the queen was often crowded out below. The fault, the cause, and the cure, are each dealt with in a few concise words. There is one little difficulty still not cleared up by the writer, namely, what is to be done with the large quantity of empty combs which he apparently collects? They must not be put back again into the top storey, as is usual, and they must not be put below, as fully-drawn-out comb induces too much breeding, and to cut them up for the wax-pot I consider wasteful. Should Mr. Simmins have time perhaps he would explain his method of dealing with them.

The many other tips, such as the single-walled hive, the aspect for hives, the enamel quilt, all mentioned incidentally, afford much food for reflection: but, wheugh! the wind has touched a rheumatic joint, and I must bring this yarn to an end,—to be concluded in our next.—E., *Aberystwyth.*

EXHIBITORS AT SHOWS.

[318.] Are we poor would-be exhibitors to understand that to have a chance of winning a prize at the B.B.K.A.'s show we must glaze each separate section on both sides, and then put it into a show-crate having glass on each side as well, or (what a boon!) that we can get out of the difficulty by first putting each section into a small box having glass sides, and then place box in show-crate? Why this double doing it? What does uniformity gain by it? Would not a plain show-crate showing through glass sides each side of every section please the eye and keep robber bees at bay as well? Or, if I may be so bold, that each separate section must be glazed on both sides if not shown in (glass-sided) crate that shows each side of every section without unpacking? The quarter-inch paper edging is not much certainly, but just enough to hide many defects or pop-holes in what may otherwise be a perfect section, and would lead to sections taking prizes before those which perhaps were not quite so good in centre of visible surface, but which might have no other defect, and would therefore be better sections than those taking prizes before them. Then the expense. I have always understood that one of the rules of our glorious B.B.K.A. is that bee-keeping was to be taught more especially for the good of the poorer or cottager class, yet we have here a rule which will put our cottagers outside the exhibition altogether, and, in a sense, others besides cottagers too. I for one cannot afford to keep bees unless at a profit. I got only an average of ninepence for my sections last season, and shall never get more, and most likely less; then why should we go in for unnecessaries? As to bottled honey, does the rule mean that the bottles must be corked and capped in addition, or will the cork inside the screw-caps meet the rule, and that the bottles should only be corked when parchment, &c., are used for covering instead of screw-caps?—FRIAR TUCK, *Mansfield, Woodhouse Notts.*

A MATTER REQUIRING AMENDMENT.

[319.] As one that takes a lively interest in the industry of bee-keeping, I am surprised to think that such a practice has been allowed to go on so long without being condemned, as that which I am about to bring under the notice of the bee-keeping community. The facts I refer to are as follow, and I can vouch for the truth of the statement, several instances having come under my own personal notice. In the honey classes of some of our Scotch competitions, several parties well known to the bee-keeping world make it a practice of going about the country and buying up all the poor cottagers' honey at a ridiculous small price. This is put aside until the first annual honey show comes round, is then staged as the exhibitor's own produce, and in many cases wins the best prize, and is sold at a good figure.

This, I think, is a very unfair practice, and should not be allowed at any competition in the honey classes. Some are not even satisfied with what they lift in the country under false pretences, but drop into the shops of some of our honey dealers and make a selection from their stock, which is also shown as their own produce. This practice being allowed does not give the honest bee-keeper a fair chance in competition. If exhibitors cannot produce honey from their own bees, they should not be allowed to compete with the exhibitor that has; for it is a very discouraging thing to see a man winning many of the leading prizes, and not one pound of the honey his own produce, and I would suggest the following clause be added to the rules of every Association:—

'That all honey staged for competition must be the sole produce of the exhibitors' own bees, gathered in the natural way during the current year.'

The rule in many competitions is: 'That the honey staged must be the *bonâ fide* property of the exhibitor.' The swindlers I refer to take the benefit of the last-named rule, and have the idea they have acted fair. I urge these remarks to the consideration of every Association when framing rules, and will be happy to see some of our advanced friends take up the subject, and give their opinions regarding it. Meanwhile I wait with patience in hopes that bee-keepers generally will respond to these remarks, and by doing so put an end to this most obnoxious system.—JOHN D. MCNALLY, *Springburn, Glasgow.*

[The practice is a most reprehensible one, and should be stopped. There need be no difficulty about this. The compilers of the Schedule can insert a sufficiently stringent clause to prevent it.—ED.]

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[203.] *Croaking Noise.*—So far as my experience teaches me, there are two kinds of croak among bees. Firstly, when, upon the putting on of the quilt, a bee is fixed between it and the frame top-bar; this is, evidently, produced by the wings, and ceases upon the release of the bee. Secondly, a croak peculiar to the queen. This I have many times heard, and when, as in late autumn or early spring, drones are non-existent. 'Nucleus' properly describes it as a distinct croak. I have heard it both when a hive is closed and when open, and so frequently, that the sound not only assures me of the presence of a queen, but I have even been enabled by it, more than twice or thrice this season, to take out the particular frame upon which was the queen at the period of examination. Up to this present, there is not a drone egg, much less a drone bee, in my apiary.—Apiarist.

[272.] *Cleaning Extractor.* (J. I. S.)—Thoroughly scour with whiting and oil, and, if very bad, rub with very fine emery cloth; when clean, keep a little oil on when not in use. You cannot have it re-tinned. You can have a new cylinder fitted to inside cage-work, if desired.—W. P. Meadows.

[299.] *Unfertilised Queens.*—(A Cockburn.)—Most bee-keepers have unintentionally tried the experiment. When a queen is lost late in autumn her successor becomes practically a prisoner, or at any rate her liberty, in the absence of drones, is of no service. Within the last fortnight I have met with a case to the point. On examining a friend's bees I found a stock full of drone brood in worker cells, and found the young queen. I had seen a queen in this stock late in September. She must have been lost, therefore, and replaced after that date. The young queen having had no opportunity of working was a drone-breeder.—F. Lyon.

[299.] *Unfertilised Queen.* (A. Cockburn.)—Parthenogenesis is not confined to the genus Apis alone, but is known to exist in many other insects, especially so is it observable in the Aphides; there is not the remotest doubt but that such is a fact. I have reared mother-bees after all the drones in the apiary have been killed, and on every such occasion they have proved drone breeders; this is not only my experience, but anyone who has so reared them will give the same facts. Only two weeks ago I found a drone-breeder in a hive; this hive had on the 13th February a properly fertilised mother and worker brood and eggs in the combs; this mother-bee was killed by imprudent manipulations, a fresh one was reared, which I saw, but there being no drones at the time she could not be fertilised, and as a consequence is now a drone-breeder. Dissection will also prove the above facts; for instance, on examining a drone-breeder except in very isolated instances, the spermatheca does not contain any spermatozoa, which conclusively proves that effectual connexion with the male has not taken place.—W. B. Webster.

[299.] *Unfertilised Queens.* (A. Cockburn.)—I *think* any bee-keeper would experience a great difficulty in confining a young queen recently hatched, as where the ordinary workers could obtain an exit, she would manage to squeeze through. I have never heard of such an experiment being made; and if it was, what would it prove as any advantage to bee culture?—G. H. G.

[300.] *Worker and Drone Eggs.* (E. W. P.)—Querist does not give age of queen. Young queens just mated will often for a little time lay some drone-eggs in worker-cells. Old queens that are nearly spent do the same, and I have known queens do it that have got injured by pressure, when they have rather a 'canny' appearance, with their wings most likely not even and symmetrical. Imported queens often do this for some little time after being liberated.—G. H. G.

[300.] *Worker and Drone Eggs.* (E. W. P.)—There is a possibility of the spermatheca becoming emptied of spermatozoa, but when such an event happens a very visible diminution in the strength of the colony is observable before such an event occurs. Are you sure that they are drones in the worker cells? I was myself surprised on opening one of my hives about a fortnight ago at seeing what at first sight appeared to be drone brood, but on releasing a few of the inmates who were on the point of emerging I found they were workers. In order to account for this phenomenon I found that the cells in this part of the comb were exceptionally shallow. The weather being too cold for wax to be used the bees had elongated the cells with the substance they use for capping brood and so formed what appeared to be drone capping; this may be so in your case. Another explanation may be found in the fact that being short of drone-cells they have used worker-cells that have become enlarged by the foundation stretching, which is often the case when adulterated or been subjected to a very high temperature. If the original mother has been killed and a fresh one reared, she, not having been fertilised, would lay drone eggs.—W. B. Webster.

[301.] *Sting Antidote.* (Melissa.)—The application of carbolic acid directly the sting is inflicted was recommended in this *Journal* last season; I think the remedy is almost as bad as the disease. My advice is to get used to it. A very highly recommended antidote is advertised frequently in this *Journal*.—W. B. Webster.

[301.] *Sting Antidote.* (Melissa.)—Best antidote is to get blood inoculated with the poison (formic acid); and, second, apply alkali, of which I always found ammonia most successful.—G. H. G.

[302.] *Wax Discoloration.* (Melissa.)—This takes place in that part of the comb where brood has been reared, the portion where honey only is stored; keeps its colour for a very considerable time; pollen stains the comb. Your own table-cloth does not retain its pristine whiteness after having been much used, and so it is with the bees' combs.—W. B. Webster.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[319.]—*Drones.*—Has it ever been proved beyond a doubt whether drones produced by unfertilised queens are or are not capable of fertilising queens?—F. Lyon.

[320.] *Foul Brood.*—Can any bee-keeper having *had* practical experience of foul brood state his method of cure, and the respective merits of salicylic acid and phenol?—G. H. G.

[321.] *Bees Flying from the Hive.*—Could any of your readers explain how my bees are flying from the hive never to return? I have a bar-frame hive, which I examined last week, and found some of the combs a little mouldy. I cut the mouldy pieces away, and gave them the best of the comb in a new hive. Now the bees began to come reeling out, and next morning I found the half of my bees dead in front of the hive.—R. Jones.

Echoes from the Hives.

Ecclefechan, April 30th.—The past winter has tried any colonies poorly wintered very severely. I have found hybrids to have stood the winter best. The stock I asked you about (and for which you gave me two answers the week before last) is doing well, and as full of bees as the hive will possibly hold, they are even round the entrance on very cold nights.—E. J. Brook.

North Cornwall Apiary, May 1.—The last month has been very unpropitious for bees in this immediate neighbourhood. The air has been very cold, and the winds high and boisterous. My diary only records six days out of the thirty as being of real use and benefit to bees in this apiary. Thousands of bees have been dashed to the ground laden with pollen, and destroyed by the cruel east winds, thus weakening the stocks to a great extent. It has been the most trying winter and spring I have experienced during my fourteen years of bee-keeping.—The Manager, *Rowe, Bodmin.*

South Cornwall, May 3.—It really seems as if fine weather were—if not come, yet coming at last. The wind still blows from the east, but there is only a little of it, and I have ventured to transfer from a badly made hive of local manufacturers to one of Abbott's. Only on one other day could I have done so, or on two at the most. Quantities of old stores still remain, but they will not last long, though I fear we can look for but little spring or early summer honey, as blossom will be scarce. I hear of no unhealthy bees in this neighbourhood.—C. R. S.

Oxford, May 1*st*.—After a short spell of cold weather, and a rather longer one of warm weather, we have had still one more change. For the past three or four days a strong easterly wind has been blowing, and consequently the bees have done less work. Plum and apricot trees remind one of winter, when they were covered with white snow; and the currant and gooseberry bushes supply a large quantity of pollen. At last things begin to look brighter, and our hearts are glad. Hives nearly full of brood, the hawthorn in bloom, may budding, the fields studded with flowers, and the flower-gardens containing an abundance of bee-flora, are sufficient to give us an impetus and wish each other success. We are moving in Oxford at last; though we cannot get every bee-keeper to join the Association, we may hope to reach 'the country flowing with milk and honey' some not far distant day. Even the Mayor has promised to assist us in any possible way. Surely we have cause to work and be happy, and trust that soon foreign honey will be excluded from our market. May it be so.—E. F. H.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

K. K.—*Hiving Swarms.*—As soon as your bees have clustered, shake them into a straw skep, and take them to the spot they will eventually occupy; towards dusk, spread a sheet before the entrance of the hive, then take away the skep, and place in its stead the bar-frame hive. Then shake the bees out of the straw hive on the sheet, and they will at once enter the hive. The frames should be filled either with comb or foundation. The quilts should be on the frames and a bottle of syrup ready before the bees enter. There are other ways of hiving swarms, but the above will answer your purpose.

J. B.—The sample of wax appears to us to be pure.

A Chatton Apiarian.—The bee forwarded was the queen. We recommend that you should let the hive alone, there being every probability that the bees will reproduce a queen.

Col.—1. *Uniting.*—The queen which you desire to retain having been secured, bring the skeps close together by daily gradations, and drive the bees from both skeps. They should be made to bear the same odour, and should be caused to gorge themselves with honey or syrup; they should then be mingled together, and placed in the skep they are to occupy. 2. *Sugar.*—The sugar will be found suitable for dry-sugar feeding, though not the best for the purpose. It is of the kind known in the trade as 'Demerara Syrups.' 3. *Separators.*—The tin separators are the best, being cleaner; the zinc and wood are cheaper. 4. *Honey Confectionery.*—Communicate with the Rev. V. H. Moyle, Ashhampstead Rectory, Berks, who will be pleased to furnish you with the information desired.

C. C. J.—*Wax, Propolis, &c. on alighting board.*—The substance enclosed in your letter consists of wax, propolis, and the excrement of bees. The explanation is this:—Beneath the cluster of bees the small particles of wax, from the unsealing of the honey cells, were scattered. The bees, from long confinement were compelled, to some extent, to discharge their fæces, which, being mixed with the refuse wax, formed a glutinous substance they were unable to remove from the hive. When spring advanced they were enabled to collect it into masses, but were still unable to extrude it from the hive; and in order to prevent ill effects, certain to arise from the effluvia of the fœtid ordure, they encased it under a covering of propolis, just as they will glue down and cover up with propolis a snail or a mouse which may have gained access to the hive and which they are unable to expel. We have often noticed the same proceeding in our own hives. Your bees were evidently dysenteric.

J. Stradling.—*Bees Dwindling.*—Your bees, being reduced in number—from dysentery, spring dwindling, or effete queen,—succumbed to an attack of robbers, and were driven from their hive, queen and all. The queen had ceased breeding, either from old age, or because she had an insufficient number of bees to cover a brood nest—probably from both causes combined. We fear the bees will not survive.

Scoty.—The names of the flowers forwarded for identification are:—1. Erophila verna—Vernal whitlow grass. 2. Stellaria holostea. 3. Mercurialis perennis—Dog's mercury. The last plant does not bear a very good reputation as it possesses poisonous properties.

Beginner.—*Swarm from Skep.*—By returning the swarm, having removed the queen, at the same time supering, you will most likely avoid any further attempts to swarm. We should advise you to transfer your bees from their present skeps to bar-frame hives, you can then control swarming by giving more room at your pleasure.

D.—*Fertility of Queen.*—The mere fact of acceptance by the bees taken alone does not prove fertility. You will know in a few days by the presence of eggs, and whether she is fertilised (quite a different thing), by whether the eggs laid in worker-cells produce workers or drones. If the latter she is unfertilised.

In a Fix.—*Loss of Queen.*—By the time young queens are raised and ready for flight, drones will also probably be flying, and if so all will go well. You can see if you have sealed drone brood, even in a skep, by the domed cappings.

R. S. R.—*Suspected Queenlessness.*—Search again for eggs. As pollen is carried in it seems that breeding must have commenced, although you failed to see any brood. As all were swarms last year, the queens would, of course, be old and might have died.

Bee-Sting.—1. *Stings.*—You will find advertised in our columns a remedy which is highly spoken of. 2. *Robbing.* Cover up your feeder so that no bees but those of the fed stock can get at the food. To allow strange bees to get at a feeder is the best way to set up robbing, which is far more easily prevented than cured.

Nigger Jack.—1. *Doubling in a Hive with high outside Walls.*—Make a plain box without bottom, 14½ wide, 8¼ in. deep, and long enough to take 10 frames, 14½ or 15 in. Use this as the top hive to contain the brood combs of the second stock. Place it directly on the frames of the lower hive. Raise the roof by a lift, as shown at B, p. 59. 2. *Working on the Doubling System.*—One hive remains on its stand; the combs of the second hive are taken from the bees and placed on top of the first, the bees of the second being placed upon their own stand and treated as a swarm. 3. *Distance Guides.*—Metal-ends are the best, but some experienced bee-keepers use none at all. If none are used, the ends of the top bars should touch the inside of the outer walls. 4. *Finding the Queen.*—You will find this become easy by practice. If you do not excite the bees much, you may often see a batch of bees, as represented on the title-page of the *Journal*, the queen being in the centre. If they are excited, by running over the combs, the difficulty of catching sight of her majesty is greatly increased. Try the centre combs first.

J. S.—1. *Ligurianising.*—We should recommend an imported queen in preference to a home-raised one. If you introduce her at swarming time, do not wait for natural swarming, but when about to take place divide the stock and give the queen to the old stock. 2. *Excluder.*—You must use a sheet of excluder the whole size, vertically, of the hive; the plan you propose would not answer.

Maugerton.—1. *Names of Flowers.*—The flowers enclosed are

produced by the Norway maple (*Acer platanoides*), and like the sycamore is a valuable tree for bee forage. If the bark of this maple is bruised or cut at this season, the juice or sap will flow out in little streams, and bees will sometimes collect this saccharine fluid. 2. *Bees on Paint.*—Bees are often attracted by the smell of turpentine, especially as existing in pitch pine or yellow deal. Being attracted to the neighbourhood of the wet paint, they were blown on to it by the wind.

SIMPLICITY.—1 and 2.—You had better obtain a good bee-book and read it up. You will soon learn to distinguish the queen when you have once seen her. See reply to 'Nigger Jack.' You cannot make an artificial swarm until you can find the queen. 3. *Smoking Bees.*—Give a puff at the entrance, then with one hand raise the quilt, beginning at one corner, while you gently puff smoke under it with the other hand. You can then lift out the frames.

DUMBLEDORY—'A. E.' has most strangely forgotten his Cornish. That a 'dumbledory in a pop-dock' means a 'cockchafer in a ginger-beer bottle' is a suggestion which has caused more than one smile. It is simply a humble bee in a foxglove, and the noise produced by struggling wings and legs is pretty well known. After all, it hardly represents the peculiar croaking spoken of. I wish I for one *could* have been at the Quarterly Conversazione. I have a lively recollection of one three or four years ago, but we in these parts are too far removed from the great centre to do more than correspond with it.—SOUTH CORNWALL.

RECEIVED from Alfred Withinshaw, The Apiary, Nantwich, Cheshire, his *Illustrated and Descriptive Price-list of Bee-hives* (32 pages).

Also several numbers of *The Housewife*, containing a series of practical papers on 'Bee-keeping,' by Edward York.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' whose orders amount to Five Pounds per annum, will be inserted Free.

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BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.
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WREN & SON, L., 139 High Street, Lowestoft.

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FOREIGN BEES AND QUEENS.

ABBOTT BROS., Fairlawn, Southall.
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Show Announcements.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 30–August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

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Editorial, Notices, &c.

ARE BACTERIA IN BEES HARMLESS?

At page 156 of the *British Bee Journal*, issued on the 8th ult., I find an editorial note referring to 'our reply to A. Rendell,' the reading of which has, in one respect, surprised me, as it quietly ignores the previous references I have made to my discoveries as to the cause of dysentery, and which have continued for about twelve months. I do not doubt the observations cited in the reply, but the fact that the discovery is mine is self-evident, and needs no comment. But later on a point of general interest and primal importance in understanding the question of germ diseases is so very erroneously stated that for the sake of a subject I have much at heart I must venture to absolutely dispute the position taken. The reply runs thus:—'We have ourselves found five or six apparently different species, but there is no more danger to be apprehended for all that. The air is full of bacteria, and at every breath we are inhaling thousands, and our bodies are full of them, but we are none the worse for it. So it is with bees, they may also contain bacilli in numbers and be in no way affected by them.'

With regard to the number of species discovered, it is enough for the moment to say that I have a slide of the blood taken from a living queen sent me by the Rev. Lawson Sisson, in which there are no less than eight distinct species at least, and I am convinced that twenty species existing in bees is a modest estimate of the number with which I am fairly well conversant; so that here I am fully in agreement with the reply, but its next statement is diametrically opposed to the conclusions of scientists: of which more presently. To rebut the assertion that '*the air is full of bacteria*, and that at every breath we are inhaling *thousands*,' it is only necessary to ask the proofs. None certainly can be given, while experiment and experience alike show the notion to be a simple delusion. Illustrations could be given in number, but two will suffice: Miquel found at Montsouris an average of one bacterium in 650 cubic inches of air; and since an inspiration of an adult may be taken at 36 cubic inches, it gives one bacterium in eighteen inspirations. In the Rue du Rivoli, Paris, he discovered a very unusually large number, amounting to one bacterium in 12 cubic inches, or three bacteria per inspiration. 'At every breath we are inhaling thousands' would hardly do even if we spent our lives in the healthful exercise of carpet-beating.

Again, the statement that 'our bodies are full of them, but we are none the worse,' is most astonishing. Where could such an idea have originated? an idea which no one acquainted with the outlines of bacteriology could for a moment entertain. In health the blood, the muscles, the brain, the nerves, &c., are absolutely devoid of any bacterial trace, and any existing would at once be noted by a bacteriologist as an evidence of disease. They are found in the digestive tube throughout its length it is true, but even there they often point to conditions of trivial or serious disturbance. In the bee certain bacterial forms in the bowels point to disease at once, while no bacteria *can* exist in the blood or tissues unless as a cause or concomitant of disease.

The statement then that 'bees may also contain bacilli in number and be in no way affected by them' is as misleading as it is possible to make it. Bacilli in the bowels may have no *serious* import, but if existent in the tissues they indicate a definite and diseased condition which demands careful and scientific investigation.—FRANK R. CHESHIRE, *Avenue House, Acton, W.*

[Mr. Cheshire has not taken us into his confidence, and we are ignorant of the discovery he has made and what he really claims, as we have seen no description or particulars of it. We know he has stated that he was making observations, but that surely is no reason why others should be precluded from doing so too. The field of research is open to all, and Mr. Cheshire surely does not claim the exclusive right of investigating any matter connected with bees or their diseases. However, though exercising the full right of making any observations we like, we do not lay claim to any discovery, and they have been carried out with the primary object of verifying the published discoveries as to dysentery of Prof. Leuckart in 1856, and Dr. Dönhoff (*Bienenzeitung* for 1857, p. 66); also Prof. Hoffman (*Notizblatt für Kryptogamische Studien*, Vol. I., p. 117; *see* also *Bienenzeitung*, Vol. XIII., p. 67, Vol. XV., p. 151; Vogel's *Handbuch der Bienenzucht* 1879, p. 203; Dr. Assmuss' *Die Parasiten der Honigbiene und die durch dieselben bedingten Krankheiten dieses Insects*, 1865, p. 55. We could give many other references to show that our observations were nothing new, and until Mr. Cheshire makes public what he really does claim to have discovered within the last twelve months, it is not at all *self-evident* to us that our observations can be his discoveries. When his observations are made known we shall be only too pleased to give Mr. Cheshire credit for any original discoveries. We have, however, a lively recollection that in the case of foul brood Mr. Cheshire claimed the discovery of bacillus as being the cause of the disease, entirely ignoring that Dr. Cohn had made this discovery in 1874 (see *Pestluft und Faulbrut* by P. F. Liska, 1876), and that it was subsequently confirmed by Schönfeld and others. Mr. Cheshire must pardon us for calling attention to this, and excuse us if we decline to admit any claim to discoveries not made public. We are tolerably well acquainted with Continental bee literature, what has been written to the present time and the discoveries made, and we should only make ourselves the laughing-stock of foreign scientists were we to entirely ignore all that has been

done by them. Nowadays it is absolutely necessary for a scientist to be also a linguist, for, as De Candolle points out, 'What is thought new in one country is found to be already known in another by those who read different languages.'

With regard to our statement that the air we breathe is full of bacteria, as Mr. Cheshire has cited Miquel we will also refer to the same observer. Will Mr. Cheshire be surprised to learn that Dr. P. Miquel, in a paper on the *Hourly Variations in Aerial Bacteria*, published in *La Semaine Médical*, for 6th Nov. 1884, states that the number of bacteria varies from hour to hour, and have approximately regular maxima and minima in the course of the entire day. At 8 a.m. the number of bacteria is high, and decreases up to midday. From midday to 1 p.m. there is a remarkable minimum and then a gradual increase. At 8 p.m. the air is strongly infected. From 10 to 11 p.m. the air is very impure, the number decreasing from 1 to 3 a.m., and again increasing towards morning. Taking the number at 50 per cubic centimetre of air at midday, Miquel says the rise may be up to 1000 in the same quantity of air at 8 p.m. The number of bacteria we inhale is a simple matter of calculation. A cubic centimetre is 0·061 of a cubic inch, or in round numbers about 16½ cubic centimetres go to a cubic inch. This would give us 825 bacteria per cubic inch at midday, and 16,500 in the same quantity of air at 8 p.m. By multiplying the above by 36 cubic inches for each inspiration it will be seen that it is no exaggeration to say that at every breath we are inhaling thousands. Miquel has made 'bacteriology' a study for upwards of ten years, is no novice, and is admitted to be an authority. Besides this there are the experiments of Pasteur and Tyndall, who proved that germs existed in large quantities in the air, but decreased in the higher altitudes until a point was reached when they were no longer present. We have ourselves seen animals preserved on the summit of the Simplon by merely being hung up and dried in the air, and in which no decomposition had taken place owing to the total absence of bacteria, and these animals can be kept in the fresh state at this altitude for an indefinite time. At the lower level of the Rhone Valley such meat could not be kept for a day without decomposition commencing.

Yes; our bodies are full of bacteria and 'we are none the worse.' We said nothing about their being present in the blood, muscles, brain, or nerves, and will allow competent authorities to speak respecting these, but they are only a portion of our bodies. Our correspondent admits that they are found in the digestive tube throughout its length, and they *may* point to conditions of trivial or serious disturbance, but they do not always do so, and when they do it is the exception and not the rule.

Now let us for a moment see what our leading authorities have to say on the subject, those who have been and are in the thick of the work. Speaking of micrococci Dr. Klein says, 'They are widely distributed in the air. They also occur in the body of man and animals wherever there is dead tissue' (not necessarily from disease). They are 'found in ordinary pus, in the normal oral cavity (on the filiform papillæ of the tongue and on mucous membrane), in the bronchial secretion of ordinary catarrhal exudations (nasal cavity, bronchi, &c.,) 'and in the cavity of the small and large intestines.' He further says that in the dead tissues within the living body micrococci may be found in colonies, *i.e.*, as zooglæa in the blood-vessels and in parts around. Bacilli, he says, are found on the surface of the mucous membrane lining the cavity of the tongue and mouth. Dr. Cameron says microbes (bacteria) 'are to be found everywhere, and carried by the air into putrescible matter;' also, 'microbes of various species may be found in the saliva and in the secretions of the bronchi and intestines even when there is no disease.' 'It is not enough, therefore, to find bacteria, or vibrios, or other microbes, in the fluids of the body, to enable you to say that they had anything to do with a disease.' Professor E. Ray Lancaster says in *Nature*, 'Who can say that much is known as yet about these organisms when even so earnest a student of them as Dr. Robert Koch did not know that his so-called "cholera comma bacillus" occurs in the mouths of nearly every healthy man, woman, and child?' Dr. Koch himself admits that he has found bacilli somewhat resembling the cholera bacillus in saliva, and curiously also in a bee, although he considers them different.

In their cholera report, Drs. Klein and Gibbs draw attention to the fact that comma-shaped bacilli, similar in appearance to those found in cholera, 'are ordinarily present in certain parts of the alimentary tract in health, and there is reason to assume that these comma-shaped organisms present themselves under two, if not three, forms in the mouth alone.' In the report a remarkable case is stated of a tank surrounded by huts in which 200 families were living. One case of cholera had occurred the first week in November, and in the middle of December this tank was examined. It was very dirty and contained quantities of bacilli, and this water, although contaminated with choleraic evacuations and extensively used by these inhabitants for many weeks for all purposes, including drinking, had not produced another case of cholera.

We could easily multiply such statements to show that bacteria do exist in our bodies even in health, but we will conclude by quoting Dr. Lionel Beale, who says in *Disease Germs*, page 64, 1870, 'that there does not probably exist a single tissue without these germs, and the blood of not a single man is exempt from them.' (As we have translated this passage from the French the words may not be exact, but the meaning is correctly conveyed.)

What are we to say in the face of all these statements? Bacteriology is still in its infancy, and those who have made it their study are by no means unanimous on all points, and we are not surprised to find our correspondent's views differing from the authorities we have mentioned. It has as yet to be proved that the various bacilli found in bees have anything to do with particular diseases in these insects,—and surely Mr. Cheshire will not wish us to believe without such proof that the twenty species with which he is 'fairly well conversant' represent so many different diseases. It is evident that Mr. Cheshire clings to the idea that the different species or genera breed true. Has he not found ample evidence of the transformation of one form into another, as micrococci into bacteria, and of these into bacilli, and vibriones and spirillæ, and of each of these directly, or indirectly, into the other forms? Careful observation would have revealed this fact. Professor E. Ray Lancaster says, 'The instability of the forms of schizophytes merely implies that the range of presently observable specific characters taken as a whole (which forms the true limits of what mankind at the moment calls a "species") is *not* simply and directly coincident with the range of one particular and readily observed set of characters, namely, those of form. A great deal more depends upon the question of transmutability of the form of schizophytes than is admitted at present by pathologists. We would merely warn them that the doctrine of fixity of the forms of pathogenic schizophytes is as much an *assumption* and as much to be received with caution as is the contrary doctrine of universal transmutability of such forms. One great fact is certain, namely, that *some* schizophytes do exhibit the positive evidence of change of form in the course of growth under varying conditions.'

In face of such evidence, we stated, advisedly, that 'we have ourselves found five or six *apparently* different species.' It is not enough to find bacteria in the fluids of the body to enable you to say that they have anything to do with the disease. And Dr. Cameron further

states, 'To prove the relation of cause and effect between a specific microbe and a specific disease, a much more vigorous method of demonstration must be adopted. You must not only show that the microbe is found associated with the disease, but that it is always associated with it. You must not content yourself with showing that by the inoculation of blood or serum containing the microbe the disease can be produced, but you must show that if the microbe be destroyed or removed the fluids are rendered harmless; and to complete the case you should be able to free the microbe by artificial cultivation from all contamination with the fluids of the disease, to grow it as a simple ferment outside the body, and to show that, thus purified, when introduced once more into the animal economy, it gives rise once more to the particular disease.' Drs. Klein and Koch also insist on four conditions, and that in no instance can it be *satisfactorily proved* that a disease is due to a particular micro-organism if any one of these conditions remains unfulfilled. The more one knows about bacteria the less one is inclined to speak dogmatically on the subject, and Professor Lancaster says, 'The fact is that the proportion of what we know by careful experiment and observation in reference to bacteria and their allies, as compared with what we must soon know, is so small that conclusions and generalisations are not useful except as suggestions to those who are in the thick of the work.'

Those who take up a new branch of science frequently speak more positively than those who have made it the study of a lifetime, and who have found by experience that the more they know of the subject the more they have to learn. If being admitted by competent authorities that we do contain bacteria, how is it that we do not suffer from them? Simply because, as is well known, they cannot multiply except under particular favourable conditions, and temperature, the medium in which they grow, presence or absence of certain chemical compounds, are capable of materially affecting them. Bacteria, which are, under ordinary conditions, associated with putrefactive changes in dead organic material, cannot, under these ordinary conditions, grow and multiply within the living body. Dr. Klein says: 'The cavity of the alimentary canal, small and large intestine, especially the latter, contain under normal conditions innumerable masses of putrefactive micro-organisms. These being much smaller than chyle-globules, must of necessity become as easily absorbed as the latter by the lacteals, and by these are carried into the general circulation; but being putrefactive, they are unable to exist in the normal blood and normal tissues, and therefore, in a healthy condition, perish.'

We know we must have tried the patience of some of our readers by discussing the germ theory, but we could not allow Mr. Cheshire's letter to go unanswered, more particularly as some of our correspondents seemed to be rather alarmed at the number of different bacilli stated to exist in bees, and we have deemed it absolutely necessary to give the opinions of recognised authorities, and to show that, although bacteria may play an important part in, they are not necessarily only associated with, diseases. Too little is still known of the subject to enable even the most experienced to speak positively; and when such an authority as Dr. Koch has been shown to have been wrong, we must receive with caution the assumption of those not having the same experience; and we think we have been able to show that instead of our statements being '*diametrically opposed to the conclusions of scientists*,' they are fully supported by the views of the highest authorities on the subject. We must apologise to our readers for thus fully going into a subject of little interest to them generally (although we have by no means exhausted it); and having, we hope, removed the cause for unnecessary alarm, we will now close the discussion, feeling sure that as it can serve no useful purpose, our readers will have had enough of it, and will not wish it continued in our columns.—Ed.]

SOUTH KENSINGTON EXHIBITION.

Additional subscriptions to the Guarantee and Donation Funds:—

Amounts previously acknowledged ..	£130	11	6
W. W. Bunting	0	5	0
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Norfolk Association	2	2	0
J. Kingsmill	1	1	0
J. Walton	0	2	6
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	£136	7	0

NORWICH EXHIBITION.

Referring to the inquiry made by the writer of 'Useful Hints' in our issue of April 29, we are desired to state that it is intended that the hive should, in addition to the roof, have a second body-box, in which either racks of sections could be placed, or frames, as in the lower hive; only one set of frames and one rack of sections are required to show its capability.

USEFUL HINTS.

We are now experiencing glorious weather for our bees. The high temperature, brilliant sunshine, with gentle westerly winds, and fruit trees in full and plentiful bloom, ought to gladden the hearts of all apiarists.

Before these lines are in print many of our friends will have heard the joyful cry, 'A swarm is out,' and many will be watching with pleasure the busy little insects at work in their section-boxes. In our fruit-growing districts honey is now coming in fast, and no opportunity of securing the precious nectar should be lost, since of all the honey collected none surpasses that obtained from fruit and May bloom in colour, quality, and freedom from granulation.

We have section honey collected in May and June of last year as transparent, bright, and fine-flavoured as on the day it was removed from the hive.

Feed all Swarms until their combs are built. This is positively necessary, at this early period, to push them forward so as to have all in readiness for the white clover bloom. The syrup given will be used in the elaboration of wax, and breeding will be induced thereby. No system can be more 'penny wise and pound foolish' than that of starving swarms, especially if unfavourable weather supervenes.

Wired Foundation we have found superior to all others. Upon it the bees build straighter combs, and work with a better will than upon wired frames with the foundation pressed upon the wire. In the latter case a stronger wire must be used, and sometimes the bees will cut away the foundation around the wires, leaving gaps in the comb.

The frames should be filled to within a quarter of an inch of the bottom bar and an eighth of the side bars. The top bar should have a saw-cut, and, the frame being inverted, with the slit placed over a couple of studs—driven into a bench—the foundation is quickly and easily inserted by giving the frame a slight turn, pushing in the foundation, and allowing the frame to recede to its former position. With a little practice the operation

is so speedily and neatly performed, and the foundation held so tightly in the frame, that we have found no other plan at all equal to this.

Frames of Comb should now be given in an upper storey where doubling with a view to extracted honey is practised. If such are not in stock frames of foundation must be used. The exhaustive articles on storifying, lately given by our Editor, render further remarks on this subject unnecessary here.

Dividing.—As a rule the end of the present month will be found early enough for dividing, and, indeed, natural swarms, in late May or early June, generally surpass those of an earlier date in the energy with which they work. Such swarms, placed on foundation and fed, will send forth adult young towards the end of June, the time of the clover honey flow, when their activity and working energy will be at its highest point. These swarms will often fill their hives with comb and brood in ten or twelve days, and may be supered in the very nick of time for the great honey harvest.

Comb and Foundation alternately.—Such is constantly recommended upon which to place swarms. We doubt, however, its advisability for this reason. When a frame of foundation is placed between two fully worked-out frames of comb, if honey is coming in fast, the combs will be filled and their cells lengthened before the foundation is drawn out. Consequently the new combs will be narrowed for want of room. Experience has proved to us that this is almost invariably the case, and we can show hives now, of two years' standing, where the alternate combs are twice the thickness of the adjoining ones, an unevenness which has arisen entirely from following this plan. It is best, therefore, to confine the swarm to six or eight frames of foundation, according to its size, in the centre of the hive, by division boards, for the first three or four days, and then to place frames of comb with worker cells on the outsides of the newly drawn-out and brooded combs, at the same time giving a super as well. This may be safely done if the swarm occupies the stand of the colony from which it came, and the weather is at all propitious.

Putting on Supers.—Whenever the object of the apiarist is comb-honey and prevention of swarming, supers should be given early, that is to say, when the hives are getting full of brood and bees, and before preparations are made for swarming. If drones are plentiful, and rudimentary queen-cells are once commenced, no amount of supering will prevent the issue of swarms. But if, when the hive has a full population, say about the middle of May, a case of sections is placed above, and ventilation given below, according to temperature, and a judicious system of tiering up section frames, swarming may, in a great measure, be prevented. Still much depends upon the season. The honey yield being poor, and the weather moist but warm, swarms will be plentiful and honey *nil*, no matter what system is followed; and such seasons occur sometimes. When the bees have taken full possession of the supers, and are storing honey bottom ventilation must not be neglected. It may be accomplished by wedging up the hive $\frac{3}{8}$-inch in front, and $\frac{1}{4}$-inch at back, thus causing an under-current throughout, and allowing entrance and departure for the bees on all sides. This is a very important item in prevention of swarming.

Artificial Swarms.—Where fertile queens can be obtained at reasonable prices, the following plan of dividing is, perhaps, the least objectionable and the most profitable, when increase, with a fair amount of surplus honey, is desired. Let A be the hive it is proposed to divide. About mid-day, when bees are flying, remove from A one frame of brood, with the queen, and place it in the centre of a new hive B, filling up both sides with frames of foundation or empty reserved combs, or both. Place B upon the stand of A. Take combs from A, and shake into B about half the bees from A, returning the combs to their place in A. Cage, under a pipe-cover cage, in the centre of A, the new and fertile queen, and close up the frames, removing A to a new stand. On the following morning the queen may be released, and, in a good season, both hives may be worked for extracted, or comb honey, with fair prospect of success, provided the division is made sufficiently early, say not later than the first week in June. This system must only be applied to hives with large population and abundance of brood.

Natural Swarming may be best accomplished with a fair yield of surplus honey on the plan given in 'Useful Hints' on page 162 of our issue of April 15, 1886, in which case careful watching for swarms is necessary.

Carbolic Acid as a bee-quieter requires great care in its application, or great loss may ensue. Let the novice, therefore, act with caution in its use. In our early days of experimenting with this powerful acid, we had the misfortune to destroy one of our best colonies. On a fine evening in early May, having uncapped one side of a comb of sealed honey, and placed it next to the brood-nest, the floor-board was removed, scraped clean, and sponged over with a strong solution of carbolic acid, and again placed under the colony. On passing the hive an hour afterwards we were surprised to find a number of dead and dying bees beneath the flight-board; and on re-opening the hive our chagrin and dismay may be imagined, on finding the whole population of the hive, queen, aged bees, drones, and young bees just emerging from the cells—totally demoralised, rushing over the combs as fast as their clammy condition would permit, and out of the hive to die—glued, as to their wings, by the uncapped honey, and thus unable to fly, and redolent of the scent of carbolic. The result was that the whole population, terrified beyond measure by the carbolic fumes, rushed madly about the hive, over the unsealed honey—in their fright, filled their sacs, disgorged the contents upon their companions; and finally perished miserably in their own sweets, those which were able running out of the hive to die, others perishing within the hive. We were unable even to save the queen, which was a fine prolific Italian in her prime. The brood combs were sprayed with warm water, dried near the fire and given to another colony.

In consequence of this mishap, we never use a stronger solution than one ounce of Calvert's No. 5 carbolic acid to one quart of warm water, and we apply this when manipulating, at the top of the hive rarely at its base.

Mr. Webster's invention of a fumigator for injecting the fumes of carbolic acid into hives with a view to intimidation, is most ingenious, and will no doubt prove a powerful 'intimidant'—if we may be allowed to coin a word; but we would decidedly utter a note of warning to the inexperienced, advising all to use it tentatively and sparingly.

A piece of old calico, steeped in the above solution, wrung out and spread over the tops of the frames, will enable anyone to manipulate a hive without annoyance from the bees, and it will quickly rid a case of sections of its inmates, without causing the general exodus or stampede described above; but we again say, be very careful how you apply it below, since it has a tenfold more terrifying effect upon bees than injected smoke.

Queen Wasps, keep a sharp look-out for. They are very numerous.

Weak Colonies should be manipulated as little as possible. By giving them an additional comb at the side, when more room or food is required, they will increase faster than by constantly pulling to pieces the brood-nest.

Reversible Frames.—We are not very favourably

impressed by the latest novelty in this direction, which has been portrayed and described in our columns as that of Mr. Chitty. We think these frames would quickly become fixtures; but that if their withdrawal sometimes were made a *sine quâ non*, the bottom bars would remain fixed to the 'little strip, quarter of an inch high, *each* side of the bottom of the hive,' much to the annoyance of the operator. But if, on the other hand, the withdrawal of the rectangle, complete, were accomplished, we should dread replacing it in the hive, from fear of subjecting our pets—and perhaps their highly prized queen—to a cruel and crushing death. We seem to have some recollection of a bottom rack many a long year ago, invented—and discarded for a similar reason—in the Woodbury hive of the dear old friend whose name it bears. But we live in days of progress and inventions, ranging from hive appliances to Home Rule, and we must not throw cold water on good intentions. Notwithstanding the justice and *expediency* of this sentiment, we are afraid that we cannot dance to the 'piping' of 'Amateur Expert's' queens; or rather, perhaps, we should say to the 'piping queens' of the dear old grandmother, who still sticks to the old methods of 'listening' and 'taking up.' All honour be to her. Our conservative proclivities lead us to sympathise most thoroughly with her and all her class. We once possessed an imported Syrian queen, which was so determined to propagate her own sex, that she, or her undeveloped sisters, filled the hive and a rack of sections too with queen-cells. The ends of every comb, the sides of every section, were fringed with queen-cells; and, what is more, almost every cell produced a lively queen. Swarm after swarm issued, each accompanied by a number of queens; until, after the departure of several, we had the curiosity to inspect the interior of the parent hive, when on its ten combs we found seventy odd young queens—very odd no doubt—running about most amicably over the combs, and exhibiting no signs of ill-will towards each other. Altogether not less than 120 young queens were hatched in this hive within a week; and the thought naturally comes into our mind, that if our old 'grandmother's' few queens kept up such a 'piping,' what a chorus there must have been in *our* hive! Why, dear Mr. Editor, it must have been equal to the most powerful 'hurdy-gurdy!' BUT, alas! we did not 'listen,' and so missed the treat. No doubt our friend, 'Amateur,' would have prevented all this, since his frame-hives do not cast swarms; and we too, perhaps, might have attempted prevention, but we indulged our curiosity to see what would happen, and so left nature to follow her own course. 'Amateur' has only had one swarm in three years from his frame-hives; but he does not state their number, neither the race of bees he cultivates, nor his method of prevention.

Our experience differs materially from his. Last season, although our hives are large and well shaded, many swarms issued without leaving behind them even a rudimentary queen-cell, or making any preparation for swarming, except a few drones: and our bees are hybrids, blacks, and of other races. Nevertheless, we are aware that much of this swarming might have been prevented by proper precautions. Since, however, it is quite possible to procure swarms from hives of large population, and having good queens, it is an easy matter to keep up a succession of young queens—by such means as we ventured to recommend—together with a fair return of surplus honey. If natural swarming is not desired, it is an easy matter to remove a queen, and to compel the bees to raise another in her place without much loss of time, when preparation for swarming has begun. Although we do not consider ourselves bound to answer all objections to any plans advocated under our heading, still, so far as time and opportunity permit, we are always happy to defend, or to give a reason for, statements here put forth.

ASSOCIATIONS.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

A meeting of this Association was held at the Old Town Hall on Saturday, the Mayor (I. Hart, Esq.) presiding. Among those present were Messrs. T. Carter, C. Foxon, T. Walker, W. Ingram (Belvoir), W. P. Meadows (Syston), W. S. Pridmore (Hinckley), Isaac Saunders, G. W. Smith, G. Bryan, L. Fosbrooke, J. W. Bickley, Johnson, C. Redshaw, Bird, and E. Ball, Secretary.

The Mayor said the object of the meeting was the interchange of ideas regarding bees generally.

Mr. Pridmore read a paper on 'The History of Bee-keeping,' in which he said that bee-keeping had occupied the attention of mankind from very early ages. On the Continent and in America bee-keeping was conducted on a more extensive scale, and in a more scientific manner, than in England; and when they considered the enormous import of honey into this country from the United States, Australia, New Zealand, and Russia, they would see that bee-keeping was of more importance to them than most people are aware of. The value of the honey imported into England in 1883 amounted to 33,778*l.*; in 1884 to 62,357*l.*; and in February, 1885, alone to 5385*l.*, so that for England to be anything like equal to those countries in honey production, they must to an enormous extent extend the business of bee-keeping.

Mr. Ingram submitted a paper on 'Bees and Bee-flowers.' Bee-keeping, he said, was advanced from a pursuit of amusement occasionally indulged in by residents in the country, and often in a rude, barbarous fashion, to an industry of recognised economical importance, and the proof of that was the existence of a British Bee-keepers' Association, well supported and numbering several hundred members; county Associations, embracing nearly every district in England, and the publication of two journals devoted exclusively to the interests of bee-keepers. The flora, so important to bee-hiving, had been greatly interfered with by the cultivation of the land; and as the bee-keeping industry was largely increasing, it was necessary to extend the cultivation of suitable flowers to replace the native flora by the systematic introduction and growth of plants known to afford the food required by bees. Success in bee-keeping depended on the natural or artificial advantages of the district in which the hives were situated. Mr. Ingram mentioned and produced specimens of a few plants which bee-keepers would do well to cultivate.

A third paper was read by Mr. Meadows on 'The Structure of the Wing of the Bee.'

On the motion of Mr. Bird, seconded by Mr. Carter, a vote of thanks was accorded to the Mayor for presiding.

IRISH BEE-KEEPERS' ASSOCIATION.

The annual general meeting was held on Thursday, April 29th, in the rooms of the Society for the Prevention of Cruelty to Animals, 36 Westmoreland Street, Dublin. Henry Chenevix, Esq., J.P., in the chair. Present: Hon. Richard Bellew, Vice-President, Miss Knight, Messrs. Henry Chenevix, Robert Sproule, Violet Thomas Smith, John P. Allen, John Edmondson, John S. B. Vauston, S. K. Twigg, W. J. Bramley, Walter J. Stanford, E. D'Olier, jun., Charles Frederick Knight, M.D., Hon. Sec. The minutes of the last annual general meeting were read and confirmed. The report and balance-sheet issued for the year 1885 were received and adopted, and a vote of thanks passed to the auditors. A vote of thanks to the Society for the Prevention of Cruelty to Animals for the gratuitous use of their rooms for committee and other meetings was passed unanimously. Lord Ardilaun was re-elected President of the

Association; The Hon. Richard Bellew and the Rev. Canon G. A. Proctor were re-elected Vice-Presidents; W. Jenning Bramley, Esq., was unanimously elected a Vice-President; Sir James Mackay having resigned, Mr. Edmondson was elected Hon. Treasurer; Messrs. Allen and Twigg were elected auditors for 1886. Dr. Knight stated that he did not wish to be re-elected Hon. Secretary. Mr. Sproule moved a vote of thanks to Dr. Knight for the amount of work done by him on behalf of the Association since the last general meeting. Mr. Stanford said he found that the Hon. Secretary had during that time delivered over fifty lectures on bee-keeping. Mr. Edmondson considered that it would be impossible to expect an Hon. Secretary to do this work in addition to his other duties. The vote of thanks was passed by acclamation. On the motion of Dr. Knight, seconded by Mr. D'Olier, Mr. Walter J. Stanford was elected Honorary Secretary for 1886. The Hon. Richard Bellew suggested that a subscription list should be started to pay off the outstanding accounts amounting to 31*l.* 2*s.* 9*d.*, and that circulars should be sent to members asking them to contribute. The meeting adopted this suggestion, and the following subscriptions were announced by the Chairman:—The Hon. Richard Bellew, Vice-President, 5*l.*; Rev. Canon G. A. Proctor, Vice-President, 3*l.*; John Edmondson, Esq., 2*l.*; W. J. Bramley, Esq., 1*l.*; Henry Chenevix, Esq., 1*l.*; W. J. Stanford, Esq., 1*l.*; Hon. Mrs. C. B. Bellew, 10*s.*; R. Sproule, Esq., 10*s.*; Dr. Allen, 10*s.*; S. K. Twigg, Esq., 10*s.*; E. D'Olier, Esq., jun., 10*s.* Mr. Duffin moved 'That it is most desirable that the Irish Bee-keepers' Association should take steps to have Ireland adequately represented at the forthcoming Grand National Apiarian Exhibition in London.' Mr. Sproule moved and Mr. Twigg seconded the following amendment, which was carried, 'That the Hon. Secretary be requested to communicate with the Hon. Secretary of the British Bee-keepers' Association, respecting the forthcoming Grand National Apiarian Exhibition, London, stating the grounds which prevent our co-operation, and that he be empowered to call a special meeting of the committee to take steps in the matter on receipt of the reply.' Dr. Knight moved, 'That the annual general meeting be held in future in the second week of the month of February in each year.' After some discussion the motion was agreed to.

The Hon. Richard Bellew opened a discussion as to whether the Association is advocating the right system of bee-keeping to induce the small farmers and labourers to keep bees. He was very sorry to find that the Association had been so badly supported, but if people could be shown that they would derive pecuniary advantages from bee-keeping they would be more liberal with their contributions. The change from straw hives to bar-frame hives was generally too abrupt; it would be better at first to advocate the use of improved straw hives for bees, especially those which can be fitted with frames of sections. The Pettigrew skeps were, he thought, well adapted for bee-keepers, and it was possible to manage the hives so that when the honey season was over two stocks could be united after the honey had been removed from them, winter supplies being provided by feeding up to weight. Bee literature was more valuable in his opinion than a bee-tent.

Mr. Edmondson said the bee-shows had been of great advantage to bee-keeping in Ireland. Honey was now put up tastefully for sale. One reason why the spring show was always a financial failure was that it was held at a time of year unsuitable for manipulations, and also that members had to pay for admission to the show at Ball's Bridge to get to the bee-tent.

Mr. Stanford suggested an independent show in June or July. To become a bee-keeper one should catch the bee-fever at a tent, and once a man gets the bee-fever he keeps it.

The Chairman would like to know if bee-keeping really paid, and thought the lecturer might with advantage point out to people that they had an alternative to the bar-frame hive in the improved forms of straw hives.

Mr. D'Olier remarked that sections were not seen in Dublin before the establishment of this Association.

The Hon. Richard Bellew in reply said that he had been a bee-keeper for over fourteen years, and had investigated many matters relating to apiculture. He had, by causing a strict account of expenditure and income to be kept from twelve hives, found that bee-keeping did pay. Foul brood he had banished by transferring all stocks to straw hives. Bees required, if they were to be a source of profit, an immense amount of time and personal attention; it was a mistake to ask cottiers to keep bees in too expensive a manner. At present he was engaged in working out a non-swarming system.

The following officers were appointed for 1886:—President, Lord Ardilaun; Vice-Presidents, Hon. Richard Bellew, Rev. Canon G. A. Proctor, and W. Jenning Bramley; Hon. Treasurer, John Edmondson, 10 Dame Street, Dublin; Hon. Secretary, Walter J. Stanford, Onnavarra, Lucan; Committee, Rev. J. M. Aldridge, Dr. J. Purser Allen, Rev. Canon Bagot, Frank Collins, W. E. Duffin, L. C. Gavacan, J. Malcolm Gillies, Captain Hefferman, Rev. P. Kavanagh, Charles Frederick Knight, M.D.; Rev. Thomas Lindsay, J. K. Millner, J. R. O'Reilly, D.L., S. K. Twigg. On the motion of Dr. Knight, seconded by Mr. Sproule, a vote of thanks was passed to the press for opening their columns for the report of meeting and the discussion of matters relating to bee-culture, and also for much editorial assistance given during the year 1885.

The Hon. R. Bellew having been moved to the chair, a cordial vote of thanks was passed to Mr. Chevenix for presiding.

MONTGOMERYSHIRE BEE-KEEPERS' ASSOCIATION.

We are pleased that a bee-keepers' Association has been inaugurated in the county of Montgomery under very favourable auspices. Stuart Rendel, M.P., has been elected President; E. Jones, Esq., Trewythen, Llandinan, Treasurer; and Mr. J. Francis, Caersws, Secretary. Will bee-keepers in the county place themselves in communication with Mr. Francis, and render him all the assistance they can in building up this Association?

FRANCE.

It appears that the difficulty of finding means of disposing of honey surplus is one which, of late, has been agitating the mind of French bee-keepers not less than their brethren's on this side of the Channel. Our contemporary, the *Apiculteur* of Paris, in discussing this question in one of its recent numbers, expressed itself in the following terms:—'But the question of sales remains in the same precarious state that it was. Will our bee-keepers take the initiative of forming an association to further this object as the one which already exists in England, and which is on the point of being commenced in Switzerland? A few adhesions to the appeal addressed to them to that effect in December last have reached our editor. Some of these adherents throw out suggestions which appear to be entitled to every consideration. If nothing can be formulated sooner, those interested in the movement might arrange for a meeting in Paris during the Exhibition which is to be held in that month, and then discuss the whole project as embodied in a draft. In the meantime, it would be well to see what can be done at the forthcoming shows. We would recommend, however, that greater attention be paid to taste and attractiveness in presenting their honey to the public eye in an inviting form; this remark applies not only to honey but also to the various appliances used for obtaining it.'

Correspondence.

CARBOLIC ACID.

[322.] I carefully stated in the *Journal* last year, that only a very small quantity of the strong acid had to be used. If, immediately a sting is received, the end of a wooden match or a piece of wood sharpened to a point is dipped into the acid, and allowed to touch the sides of the bottle, to take off the superfluous acid, and then placed on the part stung, and the same amount of water applied with the same piece of wood, the scar left is very small; if the acid, however, is applied with a large pole I quite agree with Mr. Webster, that the remedy is worse than the disease. Ammonia only acts as a cooling lotion, the idea that it neutralises the acid of the bee-poison is a relic of the old chemical theory of medicine. In no case that I know of has carbolic acid, properly applied, failed to take away the pain and swelling, and I shall be very glad to hear any testimony to the contrary, either through the *Journal* or privately, as it is not a patent, and any one can use it. Has any one known Dr. Pine's lotion to fail in its effect? I have not analysed it, so cannot say what its contents are.

With regard to 'E. F. H.' he must have been stung by a drone, as he talks ('tis passing strange') of 'he' and 'his.' If he had been stung in or near an artery, and the poison had formed a clot in it he would most likely have had to be fitted for his wooden surtout, which would have been a sad loss to us bee-keepers, as we should miss his amusing letters.

The bee-poison is taken up by the lymphaties and may get into the smaller veins, but I have never known a case of inflamed veins from a bee-sting.—Geo. Walker, *Wimbledon.*

STINGS AND GLOVES.

[323.] 'Cottager's' inquiry (No. 297) as to stings and gloves received two answers in this week's *Journal*. They give him, however, poor encouragement and little help—are truly 'Job's comforters.'

Allow me to say a word. Like 'Cottager' and some others, stings formerly rather seriously affected me, but I can assure him that I am now gradually becoming much more indifferent to them; they affect me less and less every year. I cannot, however, even now, altogether on some occasions dispense with gloves. But now for my advice. After long experience of gloves, and having tried many, I give my decided vote against all the woollen gloves generally recommended. They are cumbersome, and, worst of all, entangle the bees, and provoke them to sting. And then, when one bee stings, others follow as a matter of course; india-rubber gloves are unbearable, and the worst of all. Contrary to custom, I recommend leather gloves, but you must take especial care what kind of leather you get. Some kinds make the bees furious. Ordinary 'garden gloves' do this. I always use a good pair of thick ordinary driving-gloves, the great thing being to take care that they have a smooth, shining surface. To these I attach short gauntlets made of white American cloth. This is the best material, because it is smooth, and so the bees are never get caught by their little claws, and, being stiff, it never gets into creases, which are so many traps to hold bees, and make them begin to sting, and so provoke a storm. I find that such gloves very seldom get a sting.

But further—and this is a most important point—have at hand a little weak carbolic acid; and, before you begin to manipulate, wet your gloves slightly with this, and if by chance you receive a sting on the gloves or clothes instantly apply a drop of the mixture to the spot. It removes the smell of the poison and prevents mischief. Wetting the gloves with water is a great preservative, but carbolic acid is much better. I use a little on my hands when without gloves.

And now, as another 'useful hint' in the same direction, let me say that I generally remove coat and waistcoat, and substitute a waistcoat with sleeves buttoning at the wrist, made of smooth holland. This is cool and comfortable, and presents a surface which is very seldom stung—much less so than a flannel shirt—and then there is nothing to entangle the bees like coat-tails. Have the collar of the waistcoat cut *very low*, and the veil, which goes under it, is kept well away from the face.—F. G. Jenyns, *Knebworth Rectory, May 7th.*

STINGS AND GLOVES.

[324.] I fear 'A Cottager' will be more alarmed than ever when he reads 'E. F. H.'s' sad tale. As a novice may I be allowed to report my experience, which I hope he will find encouraging? I began bee-keeping only last year, and during the season received about thirty stings, occasionally three or four at one time. The first few I found painful, and although I used liquid ammonia freely my flesh 'puffed' up, and the irritation after swelling had subsided was almost unbearable; but, I am glad to say, I at last became inoculated, so at the latter part of the season the stings caused me little or no suffering or even inconvenience by swelling. I left off ammonia, and my only remedy was the extraction of the sting as soon as possible. This year I have been stung once; for a few hours my hand was swollen a little, but nothing like last year's first experience. For the bees' sake I prefer not to be stung, still I do not entertain the slightest dread of very serious effects of their animosity or spite. I use a veil and smoker, but have never worn gloves.—Ernest.

BEE-STINGS.

[325.] In reply to 'Cottager's' question, 'Can he get inured to bee-stings?' I answer, 'Yes.' Like him I found it inconvenient to have a swollen face. On one occasion when driving from a skep I inverted it without smoke (it having gone out) with the result that I received a great number of stings in the face and head. since that I have not, to any extent, been affected by stings.

Last summer while getting a swarm, the box which I was standing on, went over, and all the whole swarm over me, some forty, or more, stings were taken out of me, and am happy to say that I did not swell in the least, although the pain was dreadful. This season I have had several stings in the face, without any bad results.—Thos. J. Davis, *Bromley, Kent.*

THE NEW FUMIGATOR.

[326.] There is no doubt that Mr. Webster's fumigator is a step in the right direction, and as I did not observe in his remarks any appearance of an intention to patent the invention, but to give the idea to the bee-keeping fraternity, as has been so frequently done in the past, perhaps he will forgive me for suggesting a simplification of his method of applying phenolised air (neither 'fumes' nor 'vapour' is a strictly correct term) in subjugating bees.

If we use a sponge of just sufficient size to squeeze into the furnace part of the ordinary smoker now in use, and dip this sponge into water; then after wringing it out, add one teaspoonful of phenol (*i.e.* carbolic acid, alcohol, and water in equal parts), I do not think we need fear the acid being blown out of the chimney, as there is the perforated tin protector to prevent it. The expense of using carbolic acid for the purpose, and in the way suggested, is, too, a matter for consideration as against the old rags of the smoker, costing nothing. At present, having only too frequently recurring opportunities of purchasing suits for certain young bee-

hunters, who test said clothing in the adjoining woods, on the trees, and the branches thereof, I find an old corduroy garment clipped into strips and tied in small rolls, provide any amount of smoking stuff, which is so good that to get it extinguished, not to keep it alight, is the difficulty.

I have tried carbolic acid, and this certainly disgusts the bees into retreat, but I do not find it quieten them; and if used at the mouth of a hive before manipulating would, I believe, have a tendency to irritate them, instead of alarming them into gorging a skinful of honey, as is done by smoking, the signal of the 'hive on fire.'

I only draw attention to this for the purpose of ventilating the question (not the hive), my experience of using phenol being very limited.—R. A. H. Grimshaw, *Horsforth, near Leeds.*

PREVENTION OF SWARMING.

[327.] In his review of my book the editor endeavoured to prove that the 'principle' upon which my system is founded is not new. By referring to page 9 he should have seen that I do not claim that the principle itself is new; but inasmuch as the same is *applied* as a *system* to modern hives to meet present requirements, I am justified in claiming that a new method of management has been instituted. On the said page the opening chapter begins thus: 'Simmins' original non-swarming process is based upon purely natural principles; and is founded upon the fact that *No colony in normal condition attempts to swarm unless it has all its brood combs completed.*'

Hence it is clearly shown that the 'principle' was known by me to be already existing; but for the first time it is *applied* in the form represented as a complete system.

Take a parallel case. The first great principle upon which all extractors work is that of centrifugal force, which has ever been in existence; but nevertheless the first inventor of the machine *applied* that already existing force in such a manner as to bring about an entirely new method of obtaining honey from the combs. But that is not all; even since this application different bee-keepers have brought out extractors under their own name, when any improvement only has been added by them. Thus we have the 'Cowan' Extractor, Abbott's Extractor, &c.

Again, look at the moveable comb principle first introduced in a practical form by the great Langstroth; and since whose time no actual improvement has really been made in the frame which holds the comb; yet we have different forms and methods of application of the same, as the 'Cowan' hive, 'Raynor' hive, and a host of others. Each claims originality in regard to his own peculiar form of application, and justly so.

While it is admitted that the bee-keepers' profits are greatly enhanced by the prevention of swarms we are asked to believe that the community already possessed the means of staying the issue of such. Nevertheless, we find in the issue of January 7th of the current year, p. 11, an editorial reply to this effect: 'There is no certain method of preventing swarming;' also in the *British Bee-keepers' Guide Book*, while showing why it is desirable that no swarms should be allowed, the author goes on to say that 'this is *frequently very difficult to do.*' As a matter of fact, too, because no reliable, or definite system of prevention has hitherto been established, especially while working for comb-honey, the vast majority of bee-keepers candidly admit that they could not as a rule prevent the issue of swarms, and among these we have some of the first and largest producers of the day.—S. Simmins.

[In our review of Mr. Simmins' pamphlet we stated that many systems had been introduced based upon this principle, and that it was not new. We did not say that Mr. Simmins claimed the 'principle,' but that this principle applied to frame-hives was what he claimed as original; we, therefore, fail to see in what way we have misunderstood him, or not given him credit for applying the principle in his own particular manner. Geddes's system was, however, founded on the same facts, although he states it in other words. We cannot admit that the system as *adapted to straw skeps*, page 20 of our correspondent's pamphlet, is new in any respect.

We cannot see that the cases he cites are at all parallel. Neither the extractors nor hives are claimed as *original*, but as improvements; and we think our correspondent would have done better and avoided much criticism if he had called his the 'Improved Non-swarming System' instead of the 'Original Non-swarming System.'

With regard to the reply alluded to, we would state that when once the bees have got the swarming fever there is no certain method of preventing swarming, and not even the system advocated by Mr. Simmins would do it. We have known bees to swarm in such cases even after half the combs had been removed and empty ones put in their places. By quoting a portion of a paragraph from our *Guide Book* our views, as there clearly stated, are not expressed. The paragraph reads thus on page 15: 'Those who desire a harvest of honey and not an increase of stocks, should endeavour to prevent bees swarming. This is frequently very difficult to do, *because when bees have once got the swarming fever* every device of the bee-keeper will not check it. If, however, steps are taken in time, swarming can generally be prevented by giving room in the hive and supers a little *in advance of the requirements of the colony.* Keeping the hive cool and giving plenty of ventilation also assists in checking swarming. Another way is to give room for the queen to deposit her eggs by removing combs containing brood and giving *empty combs or comb foundation.* Should the combs be filled with honey, additional breeding space can be given by extracting it. *Whatever plan may be adopted, the bees should never feel cramped for want of room.*' Also, on page 56, in describing the doubling system we state 'Colonies thus treated are effectually prevented from swarming.' We know that those who do not give bees the required room admit that they could not as a rule prevent swarming. We are acquainted with most of the leading bee-keepers and largest producers both here and on the Continent, and know that those of them who do give the necessary space are able to work their apiaries and entirely prevent any desire to swarm. We recently visited one of the leading bee-keepers in Geneva, the owner of upwards of 200 hives, who has not had a natural swarm for many years, and entirely prevents swarming by giving abundance of room in advance of the requirements of the bees, and this is the whole secret of the non-swarming system as practised on the Continent. This gentleman has three apiaries at some distance from his residence, and yet he is certain of his bees not swarming during his absence, and he could not give the attention required for the constant manipulations required by Mr. Simmins's method. Once the bees have acquired the desire to swarm no method of preventing them is certain.—Ed.]

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[319.] *Drones.* (F. Lyon.)—Rather a difficult matter to prove, and I doubt very much whether it has or ever will be. Why should they be unfertile? They never partake of the outward or inward form, colour, or variety of the drone which fertilised the mother, which, I think, conclusively proves that the drone plays no part whatever in the formation of the male progeny.—W. B. Webster.

[320.] *Foul Brood.* (G. H. G.)—I have cured foul brood with phenol, acting strictly according to the directions of Mr. Cheshire, and changing the mother bee. It has never reappeared in the same apiary. I have not used salicylic acid for that purpose.—W. B. Webster.

[320.] *Foul Brood.*—See our answer to R. J. Collisson in 'Notices to Correspondents.'—Editor.

[321.] *Bees Flying from Hive.*—R. Jones's bees, I have no doubt, succumbed to the cold; transferring bees from one hive to another requires great judgment, especially if part of the combs have been destroyed. In his case I should only have allowed the bees two combs, placing them in the centre of the hive, with two boards on each side to keep the heat in till they got stronger, then adding only one bar at a time.—Charles E. Cuthell.

[321.] *Bees Flying from the Hive.* (R. Jones.)—Simply changing bees from old to new hive would not have the effect you describe. When combs are only a little mouldy you need not cut it away, the bees will clean it when they want to use that portion. The only inference that I can draw from your description is that there must be something deleterious in the wood of the new hive. Turpentine is very pernicious. Examine hive, &c., and note whether the wood is saturated with anything of such a nature.—W. B. Webster.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[328.] *Untimely Drones.*—Drones were flying in large numbers six weeks ago from a bar-frame hive that contained a strong swarm of last year. I find them now all gone, brood on seven frames, and drones just hatching out. What was the cause of their presence at that time, as they had unquestionably wintered in the hive, and the queen was perfect?—G. H. G.

[329.] *Hiving Swarms.*—Will some practical bee-keeper inform me if, after the swarm has clustered on tree and been shaken into skep, I shall be doing right in shaking them out in front of bar-frame hive at once, or let them stop in skep until the evening?—Farmer.

[330.] *Thinning Foundation.*—Can any of your readers tell me why my bees neglected to thin the foundation-comb I gave them last year? It was the thin sort, and I inserted the whole sheets, filling nearly up the frame. In one instance I have an odd-looking bar built upon one side and not the other.—Charles E. Cuthell.

[331.] 1. *Honey.*—How am I to know when the honey harvest commences, and when it terminates; also when there is a honey 'glut'? 2. *Comb Designs.*—How can I induce my bees to form the comb in the shape of letters, &c.?—J. D.

[332.] *Fixing Foundation.*—Wanted to know the best means of fixing foundation in frames that have waxed guides, as the frames would have to be taken in pieces for a saw curf. Can this be avoided?—Inquirer, *Yorks.*

[333.] *Queen Fertilisation.*—Is it possible for the spermatozoa in a queen-bee to become exhausted, and the queen to be fertilised a second time? I have a queen that is hybrid, the progeny of which are gradually becoming more and more to resemble the black, though they still retain their hard-working (and stinging) superiority. The hive has not swarmed to my knowledge for two years, nor have I seen any queen-cells or absence of eggs, as would have been the case had the original queen been superseded.—Doctor Craigs, *Dumfries.*

[334.] *Dry Comb Foundation.*—I have a quantity of sections over from last year, ready fitted with comb foundation. The wax has become dry and brittle, and along the edge a little mouldy. Please say how I can make the wax fresh, as bees do not take readily to foundation in this condition.—A Subscriber, *Kircubbin.*

Echoes from the Hives.

Sunningdale, Berks.—I find that auriculas are a capital flower for pollen for the honey-bee. There is a good-sized bed of these flowers in full bloom near my hives and the bees go home from them laden with pollen every day just now. The flowers are quite hardy.—F. G.

Dumfries.—On April 12th, after manipulating one of my hives, I saw a bee on the landing-board struggling with another, which I caught, and saw it was a drone, not quite up to usual size. This had been turned out of a hive containing nine frames of bees, four of which contained brood, some hatching—none drone-brood, so that it must have remained all winter.—Doctor Craigs.

Carlisle.—The children of the village brought me 703 queen-wasps between April 29th and May 8th, all caught in their gardens, or close to the village. The wasps are very large creatures.—Beeswing.

Swineshead, May 3.—Only had a few good days for bees. The sharp frosts lately, especially on the 28th, 29th, and 30th ult., have impeded the secretion of honey from flowers which are now abundant. In this district many of the stocks are still weak from losses during snow, &c., also in skeps from queenlessness. Clovers are growing luxuriously.—R. Thorpe.

Stretton Heath, Yockleton, Salop, May 5th.—Perhaps you may find the following interesting. In the first place I am a shoemaker, I started to keep bees on June 9th, 1883, by purchasing one stock of bees in a bar-frame hive. At that time I had never seen a drone or a queen. I am now in possession of eighteen stocks of bees, all in bar-frame hives. The hives are all my own make with the exception of three. I enclose one of my circulars, and you will be able to judge by that whether I have had success in bee-keeping or not. I wish the *British Bee Journal* every success, for I cannot find words to tell you how much I have learned from reading its pages. We are having some most beautiful weather for the bees this week.—John Bradley.

Somerton.—First swarm in this district came out of a bar-frame hive, the property of W. Snow, Somerton, on Sunday, the 9th of May. All stocks seem to have wintered well here, and several late swarms which were unlikely to hold through the winter have done so, and, though weak, are likely to build up now. Weather yesterday, very close and warm; this morning, cloudy, and much cooler.—J. I. S.

Scrafton Lodge, Middleham, Yorkshire.—Queen Wasps.—I quite agree with Mr. Riky about wasps being numerous this year. I killed on May 4th, 42; 5th, 18; 6th, 140; and 7th, 119; these were all killed on gooseberry bushes with a piece of elastic, than which nothing can be better or quicker.—A. W. Chaytor.

Thickthorn, Norwich, May 6th.—For the last week or ten days the weather has been very fine, but still cold nights continue. Cherries, pears, and plums are flowering freely, but the secretion of honey is but little. The common bay laurel and the bird cherry have been much frequented lately by bees, collecting a saccharine secretion produced by small glands situated at the base of the leaf blades. In the bay laurel the glands are level with the surface, but in the bird cherry they are raised a little, and are about the size of a pin's head. My twelve stocks that were wintered on aphidian honey have got through all right, and at the present are strong and healthy.—Henry Dobbie.

North Leicestershire, May 8th.—Nearly a fortnight of splendid weather has set the bees going in fine style. Fortunately, too, there has been plenty for them to 'go' at; gooseberries, currants, plums, pears, dandelion, and gilliflowers, are in full bloom, and the sycamore and maple are just bursting into bloom. Stocks are improving fast, but there seems little likelihood of May swarms. Queen-wasps are frightfully numerous.—E. B.

Chippenham, May 8th.—Up to the middle of April the weather was not favourable for the bees; they, however, made good use of genial opportunities, and I believe great activity has prevailed within the hives. May has commenced gloriously, the bees working splendidly for the last

ten days without a check. The young bees are coming out strong to gather forage, which is now plentiful in every direction. The apple bloom, which is late, is just bursting forth. Drones made their first appearance to-day. Prospects are certainly improving, but let us not boast, as there there are no doubt drawbacks to come.—W. A. Warrilow.

Hartley Vicarage, near Sittingbourne, May 8th.—Early Swarming.—It may interest some of your readers to know that in the 'Sunny South' not only has the *honey* season commenced, but the *swarming* season as well, for in this immediate neighbourhood I have heard of two swarms in this week, one at Sittingbourne on Wednesday, the 5th, and another at Lower Halston on Thursday, the 6th. The former was secured, but the latter was lost, flying straight away from the hive without settling; and I have this day seen two stocks in this parish which, with weather like to-day, may swarm to-morrow. Our cherry orchards are now in full beauty of flower, honey is abundant, and about half the stocks in my own apiary have required supering.—F. T. Scott.

Brecon, April 28.—To-day, upon uncapping some stores for a stock, I noticed coagulated honey in some of the cells; while others, side by side when uncapped, showed it in a *liquid* form. It afforded evidence of how much the 'condition' of honey is affected by its source among the bee flora.—T. P. C.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

O.—*Vignole System.*—There is no danger of the bees of A and B fighting, because when A is put in place of B the bees from this hive will return laden with honey, and will be cheerfully received in a depopulated hive. You should cage the queen if you carry out the modification you propose, because there would be a risk of the bees fighting. In doubling, as recommended on page 148, the bees are not prevented from getting between hive and outer cases, which are also raised, and there would be no object in doing so as these only act as protection against the heat of the sun, and in giving free ventilation round the hives.

Beeswing.—We do not apprehend that the disease will reappear this season, but it will be prudent to disinfect the combs with salicylic acid. We believe that Webster's fumigator might have the desired effect.

R. L. Richardson.—*Heather Honey.*—Heather honey twelve months old cannot be extracted by the ordinary extractors; in fact, unless it is extracted immediately after it is gathered by the bees, it cannot be extracted by such extractors. There is an extractor called 'Raitt's Honey Press,' which forces it out; or it can be cut up into cubes, placed in a conical bag, and exposed to heat, when it will exude. We are pleased to hear that your bees are now progressing favourably.

W. H.—A reply will be forwarded.

J. W. G.—*Stafford.*—1. Let the bees be moved a yard a-day to the desired position. 2. Yes; the artificial swarm having been made can be removed in the same manner as a natural swarm. 3. Portions of comb fixed to tops of frames will serve your purpose as guides. 4. 'The white grubs with red heads' are the larvæ of the wax-moth; they should be destroyed as promptly as possible. 5. Tick or enamel cloth should be placed next the frames. Old bagging can be placed above it.

J. E. Rosoman.—Discretion should be exercised in the selection of American cloth. There should be no offensive smell in that placed on the top of frames. We have not heard of any case, when care had been exercised, of American cloth being injurious to the bees.

R. S. Routh.—The bees forwarded were burrowing bees of the genus Andrenidæ—species, *A. Trimmerana*. See reply to 'E. C. D.'

R. S. Collisson.—*Foul Brood and Camphor.*—We do not think the camphor which you have placed in the hive will affect the honey, as it rapidly evaporates. As you have only a few cells affected, camphor should be sufficient to check the progress of the disease. We cannot say if it is an absolutely certain remedy, but it has been very much used on the Continent with excellent results. We are not surprised at your not liking to try the phenol treatment again. It has been used with more or less success on the Continent since 1874, but is gradually getting into disuse, principally from the trouble attending its application and from the fact that it is only at certain times of the season that it is efficacious. Most of those who have tried it have gone back to the simpler method of fumigation with salicylic acid by the Hilbert method. With this method there is no disturbance of colonies, frames, or supers, and if persevered in is certain to cure. The fumigations are done in the evening when all the bees are at home, at intervals of six days, and should be continued until a cure is effected. From four to six times is usually sufficient. One of the most important advantages of this system is that every bee, larva, and every part of the hive, is penetrated by the fumes of the acid. As you can have only your mornings and evenings at your disposal, we should recommend this plan if camphor should fail. A partial failure by a reappearance of the disease must not be attributed, as is too frequently the case, to the non-efficacy of the agent employed. Salicylic acid, thymol, eucalyptol, camphor, phenol, menthol, and other disinfectants, have the power of preventing the development of *bacteria*, but they do not destroy the spores of *bacilli*, therefore if these are present, as soon as the disinfectant is exhausted the hive having returned to its normal state, and the conditions favourable to the development of the spores, they start afresh and have to be destroyed again. It is by destroying the hatches of *bacteria* as they start into growth that at last a cure is effected. Should, however, any of the spores remain in the hive, the disease may break out at any time. For this reason we have always maintained the advisability of putting salicylic acid in the syrup given as food to bees. It is perfectly harmless to bees, and if spores start into growth at any time, they are at once destroyed. Some years ago we had foul brood extensively in our apiary and cured it with salicylic acid, and we have not hesitated to receive infected hives and place them amongst our own for the purpose of curing them. We have, however, not had a single case of foul blood in our hives since, and we trace this immunity from disease entirely to the use of salicylic acid in the food. There is no reason why camphor should not have the same effect, but the proportion of camphor which can be dissolved in water is *one* in *thirteen hundred*. Where a large number of hives are kept, we think the only practicable and sure method of cure is Hilbert's fumigation with salicylic acid.

East Kent.—The best advice we can give you under the circumstances is to remove your bees on a hand-barrow into some friend's garden some distance away, say one mile, and in a fortnight bring them back to their proposed new site on the house. Their well-being there depends on the aspect and to how far it is sheltered from north and north-east winds.

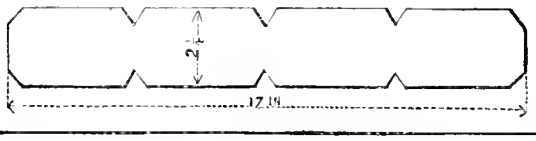
L. W.—*Wheatley, Oxon.*—We will look at the substance under a microscope and see what we can make of it. Knowing the action of all acids on zinc, we should not care to pour very hot bee food such as you describe into a galvanised vessel and give it to our bees as you confess you have. Why not put it into a stone bottle, or at least wait until it had got cold?

E. C. D.—*Andrenæ.*—The 'Andrena mining bee' belongs to the great division of the family of bees called *Andrenidæ*. One of the great distinctions between these and the *Apidæ* is that while the latter live in societies with a regnant queen, the former live solitarily. These solitary bees do not lay up stores for their winter subsistence, but display a wonderful instinct in the provision they make for their young. There are males and perfect females, no neuters. The work of preparing nests and procuring food appears in all of the species to

devolve on the females. The *Andrenæ* commonly make their nests in the earth; their cells are thimble-shaped, and composed of sand-grains compacted together by a glutinous liquid secreted by the insect. There are eighty different kinds of *Andrenæ*; probably those noted by you were of the species *Andrena Trimmerana* or *Colletes succincta*, both very common in Britain.

W. S. Pridmore.—The dipterous insect forwarded was a pure fly, though somewhat resembling a bee: its specific name is *Eristalis fossarum*. The *Eristalis tenax*, which feeds on the vilest garbage, is frequently called 'the bee-fly.'

Subscriber.—I have covered many of my sections with paper after being glazed for the three past seasons, and find it pays me to do so for the better class of customers. The paper can be got any colour, on one side only, and with a glazed surface, and will resist a very fair amount of damp and handling. Most stationers keep it, but your better plan would be to get the address of some firm who make a speciality of such labels, and get them to print you some with a special device that would be a guarantee to purchasers in future, and you would soon find a demand for your special 'brand' that would pay both you and your agent. The paper should be cut like the enclosed sketch, and the overlap would keep in the glass and give the section a neat appearance as well.—A. E.



J. S. Webb.—There is no symptom of foul-brood in the small piece of comb forwarded.

D. W. D.—*Carbolic Acid Solution.*—Carbolic acid solution is applied by a feather or brush to the tops of the frames, and has the same effect on the bees as smoke. The carbolic acid solution may consist of four tablespoonfuls of the acid to one quart of water, to be well shaken before using. Other contrivances, such as Webster's Fumigator and Raitt's Fume-chamber, have recently been brought before the public. Mr. Webster recommends a mixture of one part carbolic (Calvert's No. 5) to four parts of water and a little glycerine.

Glenesk.—*Defunct Queens.*—From your description we do not understand how the dead queen, outside the quilt, could have got there, since the hive, we suppose, had a roof or cover. If she escaped from beneath the quilt, and another queen was cast out from the entrance, it is probable that two queens were wintered in the same hive, which occurs sometimes. Examine the hive, and if you find no queen, but queen-cells in progress, you may conclude that the hive is queenless either from both queens having perished in battle, or one being driven out and the other superseded. If you find eggs and young larvæ you may rest assured that the hive possesses a queen. In either case we advise you not to interfere, but allow the bees to take their own course.

T. P. C. — *Old Combs.* — You may safely give the combs containing pollen to the bees. They will either make use of it or cast it out, and afterwards will clean and polish the combs for breeding.

Eta.—*Frame-hive under Skep.*—Neither of your proposed plans would answer. There are two methods you may pursue with fair chance of success:—(1) Drive the bees from the skep. Having cut out the worst combs from the frame-hive, cut the skep in two between the two centre combs; cut out all the brood comb and tie into the frames; arrange these in the centre of the frame-hive; fill up the hive with the remaining frames; place it upon the stand of the skep, and shake out the bees on the top of the frames. See answer to H. W. D., 'Transferring,' page 192 of our issue of April 29th. (2) Swarm your skep either naturally or artificially, and put the swarm into your frame-hive. In twenty-one days afterwards, transfer bees and combs from skep to another frame-hive. We advise you to join your County Association, but shall be very glad to receive you as a member of the B. B. K. A.

Extractor.—*Finding Queens.*—We advise you to manipulate your hives less frequently. The injury done by cooling the brood nest under frequent examination is great. Black queens are not easily found, especially by a beginner, being very shy, and quick in their movements; they often desert the combs, running along the bottom or sides of the hive. In such case it is next to impossible to catch sight of them, as they are surrounded by bees constantly in motion. When examining a hive, do not smoke at the entrance. Remove the cover *very quietly*, without any shaking of the hive. Raise the quilt gently from one side (throwing in a little smoke) until you get it clear off. Take out the dummy and a side comb, draw half the combs from the centre to the side. Examine each comb, working from centre to sides; and if the examination is carefully performed, without jarring or alarming the bees, you will soon find the queen. The colony whose brood had diminished was probably about to supersede its queen, from age, or other defect, hence the raising of drone brood; a careful examination would have discovered one or more queen-cells. You would have done better to unite 6 and 7. Your colonies are decidedly weak. If the case were our own we should reduce the number of hives by one half, reserving the best queens. According to your own account, by this plan each colony, when doubled, would contain ten frames, six of which would have brood—no very great strength for this time of year.

A. T.—Through a printer's error we said last issue that 'camphor was soluble in water one in thirteen,' it should have been one in thirteen hundred.

C.—1. *Queen Wasps.*—We hear from all quarters of the abundance of queen-wasps this spring. There is little doubt that the wasps you have killed were queens. The cry of all bee-keepers should be, *Delendæ sunt vespæ*. 2. The bee forwarded by you was a black one.

Miss M.—*Hiving.*—There should be no difficulty in hiving the swarm the same evening at the short distance mentioned. Either pour in the bees at the top, having removed some of the frames, or let them run in at the entrance. 2. *Age of Queens.*—A careful register should be kept of the age of queens; a young queen is more sprightly and nimble than an old one. The old queens go with swarms, therefore stocks which have swarmed and casts have young queens.

J. B. writes:—The flower I send you is grown extensively around here. I don't know the name of it. I find it is the best plant grown for early spring flowering; it remains in bloom so long. I can highly recommend it to all bee-keepers.

[The name of the flower enclosed is white iberis or perennial candytuft (*Iberis sempervirens*). It is a most useful plant to grow for early bee pasturage; it is easily cultivated and flowers for some weeks in early spring.—Ed.]

Queen Wasps. (313.)—Like other correspondents, I have noticed queen-wasps abound this year. On April 30th I caught over two dozen on my gooseberries, on May 1st sixteen. I had a pair of forceps about a foot long shaped like scissors. I have seen lots more in the neighbourhood. A farmer tells me they won't be so numerous in autum as last year, though I scarcely saw any last spring. Let us hope his experience may have him to a correct conclusion.—Doctor Craigs, *Dumfries.*

Manipulating Bee-House.—A rejected army bell-tent is bee-proof, roomy, portable, and picturesque for this purpose, and can be got for 25*s.*, and 1*s.* 6*d.* for bag and mallet, and will last many years.—Doctor Craigs, *Dumfries.*

We have received from Mr. J. A. Woiblet, Sanges, a simple and ingenious apparatus for embedding the wires in comb-foundation, which we hope to be able to exhibit in operation at the next Conversazione of the B.B.K.A.

Also *The Hive-bees Indigenous to India*, by J. C. Douglas.

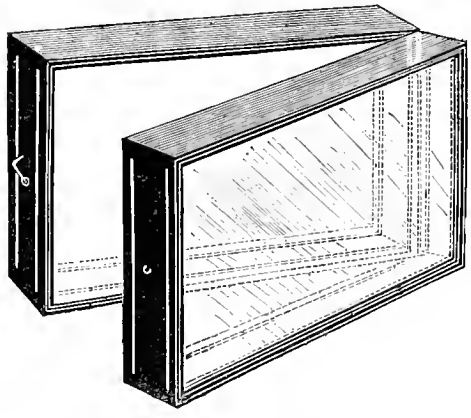
From A. G. Hill, Kendallville, Indiana, their *Illustrated Circular of Bee-keepers' Supplies and Bees.*

From Abbott Bros. a sample of their patent tin section-holders. This will be found to serve the purpose admir-

ably of sending sections safely from one part of the kingdom to another. When lined with a wooden section-box it would form a useful Parcels Post box. It is clean, and not subject to breakage or wearing out. A number of them could be conveniently packed into a very small space.

From Abbott Brothers, their tool list for carpenters, gardeners, painters, &c., and the supplement to their trade catalogue of 1885.

Received from Mr. W. H. Dolan a specimen of his 'Leaf Show Case.' This is, we consider, an improvement on



previous show-cases, as it occupies less space, and the sections are more easily handled. It opens with a hinge, enabling the judge to inspect both sides of the sections with ease, and when sent out are fitted with four sheets of glass, and hold twelve $4\frac{1}{4} \times 4\frac{1}{4}$ sections.

We have received from Mr. Webster, Wokingham, Berks, two sections of honey, one of which had been fumigated by him with the preparation which he describes as of more efficacy in dominating vicious bees than carbolic acid, the other had not been subjected to the same operation, with a request for us to state if any perceptible difference could be detected between them. We tested the sections by smell and taste, and are able to say that the effects of the fumigation had quite passed away before they reached us. It would, however, be desirable that bee-keepers should have some intimation of the nature of the preparation which is employed for the subduing of the bees on whom smoke and carbolic acid have but slight effect. We desire, moreover, to direct the attention of any of our readers who may employ this new 'intimidant' to the cautions contained in the 'Useful Hints' in this issue, p. 210.

By some misadventure in the transmission of proofs from abroad, some mistakes occurred in our last issue, in the paper on Foul Brood and Camphor which ought to have been corrected:—

P. 195, col. 2, seven lines from bottom, *for* salicylic and *read* salicylic acid; in following line, *for* Seren *read* Serex; five lines from bottom, *for* often *read* after.

P. 196, col. 1, line five from top, *for* one in thirteen *read* one in thirteen hundred.

*** *Several communications are unavoidably postponed to our next issue.*

Show Announcements.

June 29–July 5.—Hives, Honey, &c., Royal Horticultural Show at Liverpool. Secretary, J. Huckle, Kings Langley.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Entries close May 12th. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 30–August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Lyon, F., 91 Harleyford Road, London, S.E.

COMB FOUNDATION.

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BEE-KEEPERS' GUIDE; or, Manual of the Apiary. 13th Thousand. The whole work has been thoroughly revised, and contains the very latest in respect to Bee-keeping. Price 5*s.*, postage 6*d.*
BEE JOURNAL OFFICE, KINGS LANGLEY.

BRITISH BEE-KEEPERS' PRACTICAL NOTE BOOK. By Thomas W. Cowan, F.G.S., F.R.M.S., &c. Crown 8vo, boards, 1*s.*; postage 1*d.* Indispensable for every Bee-keeper. Published by J. Huckle, Kings Langley; may also be obtained of all Hive-dealers.

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Publications of the British Bee-keepers' Association:

HONEY AS FOOD. By Frank R. Cheshire, Esq., F.R.M.S. Price 3*d.*

ADULTERATION OF HONEY. By Otto Hehner, Esq., F.C.S., F.I.C. Price 6*d.*

THE CHEMISTRY OF THE HIVE. By Mr. Otto Hehner, F.I.C., F.C.S. Price 3*d.*

Address J. HUCKLE, Kings Langley, Herts.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

EXHIBITION AT LIVERPOOL.

We beg to call attention to the arrangements made for an Exhibition of appliances and honey in connexion with the large Horticultural Show at Liverpool, to commence on June 29th. The Lancashire and Cheshire Association are giving active support to this department of the Show by contributing the sum of 10*l.*, and otherwise rendering efficient aid in the arrangements. If the weather is favourable, it is calculated that not less than 100,000 people will visit the Exhibition. Prize lists for honey, &c., may be obtained upon application to J. Huckle, Kings Langley. The entries close on June 10th.

SOUTH KENSINGTON EXHIBITION.

The following donations have been added since our last issue:—

Neighbour & Son	£2	0	0
Warwickshire Association ...	1	1	0
C. H. Hodgson	1	1	0
Gloucester Association	1	1	0
J. R. Truss	0	2	6
G. Brett	0	2	6
Previously acknowledged ...	136	7	0
	£141	15	0

The Kent Association has formed a special Committee for their county, to carry out the proposals of the Committee of the B. B. K. A. in reference to the County Competition at this Exhibition.

FEMALE WASPS.

Although the *British Bee Journal* may not be the most proper medium for noting the habits and peculiarities of wasps, yet as these insects are in many of their habits very similar to bees, and at various times of the year—in spring and in autumn—the attention of bee-keepers is specially directed towards them, we feel that we are justified in pointing the attention of our readers to a remarkable incident in their natural history, which we think is well worthy of being chronicled in our pages.

For some time past we have been receiving daily intimations of the extraordinary prevalence of female wasps, which most of our correspondents have designated (perhaps prematurely) 'queen-wasps.' This intelligence has been forwarded to us from all parts of England. From Carlisle a lady correspondent tells us that the children of her village have brought her 70, while from the south, in Lymington, Hampshire, another has informed us that they have brought her 20. Our first information of this surplusage of vitality was the reception of a box containing 150 live wasps; these, so far as size, appeared fully developed. They allowed us to handle them with impunity, and they might have been pronounced non-aculeate; but they had been prematurely roused from their winter torpidity, having been discovered under the thatch of a house and forwarded to us before their powers had been brought to maturity. About four weeks after we received some others; these had been revivified in the natural way by the warm beams of the spring sun, and when we endeavoured to handle them they soon gave us evidence of their stinging powers, and made us exclaim with Cicero, '*Vespas videmus uti aculeis.*'

The extraordinary number of these wasps this spring has perplexed the minds of bee-keepers. It would appear that this super-abundance is contrary to their usual experience. Kirby and Spence inform us, 'The number of females in a populous vespiary is considerable, amounting to several hundred; they emerge from the pupa about the latter end of August, at the same time with the males, and fly in September and October, when they pair. Of this large number of females *very few survive the winter.* Those that are so fortunate remain torpid till the vernal sun recalls them to life and action. They then fly forth, collect provision for their young brood, and are engaged in the other labours necessary for the foundation of their empire.' In this year, however, the contrary has occurred; the few have died, the many have survived. And this is the more to be remarked when we bear in remembrance the great length and extreme rigour of the past winter.

Notwithstanding the extermination of so many hundreds by lynx-eyed children and adult bee-keepers, we feel assured that wasp-life has not altogether been destroyed. We shall find that many have survived and that the life-work of these wasps is being continued. They are, even now, making progress with the object of their creation, excavating their habitations, and making preparation for their brood. When we think of the amount of work which devolves on the mother-wasps we cannot but be struck with their ingenuity, industry, and perseverance. About the first week in June the young worker-wasps appear, and then they assist and relieve their mothers in their work of building cells and nursing the young wasps. In the summer months the queen-wasps are never seen out of their nests.

We as bee-keepers are, however, concerned more particularly with the wasps in autumn. It is then that we find them well-nigh ubiquitous; they boldly enter our dwel-

lings, they peer inquisitively into every corner, they visit our receptacles of sweets, they sip at our breakfast tables, they rob the grocers' shops, they annoy our bees and purloin their honey, they harass and destroy the weak hives, and their continual buzzing and hovering about are a constant source of distraction.

These questions then arise:—Shall we in the coming autumn have these pests in the same extraordinary abundance that we have had them during this spring? Are these female wasps queen-wasps? Mr. Knight, of Elton, in a paper on 'The Economy of Bees,' which appeared in the *Philosophical Transactions* of 1807, mentions that in the previous year, 1806, there was an extraordinary number of female wasps throughout the kingdom, which circumstance, he says, 'has not been satisfactorily accounted for.' He proceeds:—'A greater number of female wasps were observed in different parts of the kingdom in the spring and early part of the summer of 1806 than at almost any former period; yet scarcely any nests or labouring wasps were seen in the following autumn, the cause of which I believe I can explain. Attending to some peach-trees in my garden late in the autumn of the year 1805 on which I had been making experiments, I noticed during many successive days a vast number of female wasps which appeared to have been attracted by the warmth and shelter of a south wall, but I did not observe any males. At length, during a warm gleam in the middle of one of the days, a single male appeared, and selected a female, close to me; and this was the only male I saw in that season. The male wasp, which is distinguishable from the female and labourer by his long antennæ and shining wings, and by a blacker and more slender body, is rarely seen out of the nest, except in very warm days, like the drone-bee; and the nests of wasps, though very abundant in the year 1805, were not formed till remarkably late in the season; and then I conclude that the males had not acquired maturity till the weather had ceased to be warm, and that the females in consequence retired to their long winter sleep without having had any intercourse with them.'

Kirby and Spence noticed the same abnormal amount of female wasps in the spring of 1815 and the paucity of their numbers in the following autumn; and others have remarked the same circumstance. Might we then request our readers to make observations on the condition of wasps at the close of the season and enable us to chronicle the result in our pages?

Foreign.

FRANCE.

According to our contemporary, the *Apiculteur* of Paris, the weather in France has not been all that could be wished for our favourites, for it has been very changeable and rather cold. Not so, however, in the southern districts, in some of which they have had some beautiful days, which have permitted the bees to work on almond, plum, cherry, and other early flowering trees. Generally speaking, in those parts of the country where the weather has been more or less favourable, bee-keepers seem to be satisfied with the state of their apiaries. It is evident, however, that in the less favoured provinces the mortality has been great where feeding has not been resorted to, but even the latter have not been able to make much progress with brood-rearing. It appears, moreover, that many apiaries have suffered from dysentery. In summarising the events of last month, the Journal above named states that bees were enabled to regain some of the ground they had lost in consequence of the cold winds of March, but swarming will nevertheless be retarded this year by a couple of weeks.

Owing to the continued illness of M. Hamet, Professor of Apiculture at the Luxembourg Gardens of Paris, the lessons to be given at the opening of the season have been delivered by M. E. Beuve, Professor to the Apicultural Society of the Aube. Pending the complete recovery of M. Hamet, the practical lessons at the Luxembourg Gardens will be conducted by M. Bourgeois, a member of the Central Society. M. Asset, a bee-keeper of Sèvres, has been decorated with the order of the 'Mérite agricole.' M. Asset is the first bee-keeper who has received this distinction.

CANADA.

Writing to-day, April 24th, from Canada, the prospects for the season are remarkable. Colonies of bees are fully three weeks in advance of last season. They have wintered well, and even those who, from their feeble condition, were expected to succumb, have under existing favourable conditions built up wonderfully. Having just visited the apiaries of some of our most successful bee-keepers, a brief sketch might be of interest, especially those apiarists who intend visiting England during the Colonial and Indian Exhibition.

Arriving at Woodstock, a walk of a mile and a half brings us to the outskirts of the town, and the handsome residence of Mr. J. B. Hall, one of the Commissioners appointed by the Ontario Bee-keepers' Association to visit England. Mr. Hall was hard at work preparing to get his bees out of winter quarters (19th); over 200 stands were marked by cover—half storey and sawdust cushions—and the neatness of the apiary was pleasing to the eye. Mr. Hall has had the reputation for years, and justly, of being not only one of the most successful honey-producers in Canada, but he is also *very* successful in wintering his bees. The gentleman has also the reputation of keeping the information which he possesses to himself most jealously. It is safe to say that, whilst Mr. Hall cannot be induced to transfer the result of his large practical experience to paper, and is not anxious to buttonhole any one and press his views upon them, he will be found ever ready to answer the inquiries of any one who is desirous of availing himself practically of his (Mr. Hall's) experience. The winter repository is underneath a portion of the residence—the floor is mother earth, the walls brick; ventilators are two in number. Colonies are placed about ten inches above the ground, and piled four high and two hives back to back, and about four abreast. The temperature at time of taking from cellar was 62° Fahr. He seeks to keep his bees at a temperature not lower than 55°, and as spring approaches, still higher. This stimulates brood-rearing; and as a result, colonies on ten frames, besides having many young bees, have five and even seven cards of almost solid brood when leaving winter quarters; and as we would expect—they are in splendid condition for the honey-harvest. Clover gives the first surplus. Out of about 220 colonies, only one was affected with dysentery. It appeared strong in bees. Some six or eight were starved, and the balance, which were taken out during the night, had a beautiful flight in the morning.

Mr. Hall uses the Quinby hive; the brood-chamber is seldom manipulated; the extracted honey is secured from the upper storey; also, the comb and a perforated metal honey-board is used to keep the queen in the lower storey. Mr. Hall has extracted 2000 lbs. of honey from the upper storey with the assistance of one person in four hours. The Caucasian bees have here been experimented with and discarded: the Carniolans are being experimented with. The Cyprian and Palestine have been found wanting in many necessary qualities, and the bees are bred according to the actual results in wintering, honey-producing, &c., irrespective of colour and breed, and a record is kept of every colony; queens are only used after a year's record or more has been obtained.

Taking the morning train, Belmont is reached, and a three-mile drive brings us to the farms and residence of Mr. S. T. Pettit, of Belmont, President of the Ontario

Bee-keepers' Association, who, ever since Doctor Thom, of Streetsville, suggested an exhibition of honey at the Colonial and Indian Exhibition in his retiring address as President of the Association, has spared no labour to bring the suggestion to a successful issue. Mr. Pettit has also been very successful as an apiarist for the last five or six years. He winters outside, packing his bees in chaff, and hinging clamps upon their summer stand. Commencing on a small scale, and with little knowledge, some eight or nine years ago, he relates, he obtained his information through often dearly-purchased experience. Good literature was rare, journals published were not as comprehensive to the beginner as now; but success has crowned his efforts for some years. Mr. Pettit has lost only two colonies out of about eighty, and they had been at work gathering honey and pollen for nine days. The combs and manner of alighting of bees showed that not alone was pollen gathered in abundance, but also honey. Soft maple, willow, and elm were in bloom.

Honey is secured, as with Mr. Hall, from top storey. There are two farms of Mr. Pettit's within easy range of the bees, and in a ramble through the woods many fine linden-trees were pointed out, for which room had been carefully made by cutting down trees of less value to the honey-bee. Alsike clover-fields also will probably yield a fine flow of honey, besides a paying seed crop. A cellar and extracting room is in the course of erection; and in future, owing to climatic disadvantages, intensified as timber is being cleared away and shelter diminished, the bees will be wintered in the cellar. The ungainly clamps of all shades and cuts certainly lend no charm to the apiary.

Mr. Pettit has relinquished the mananagement of his farms to one of his sons, and, unless it be during election campaigns, devotes most of his time to apiculture and a flock of very fine South Down sheep. Like Mr. Hall and the owner of the next apiary we visit, Mr. Pettit can seldom be induced to give the result of his long and financially successful experience on paper.

We next visit Mr. M. Ernigh, of Holbrook. He is reported to have made a small fortune from his apiary. His mode of wintering and rearing honey is much as Mr. Hall's: 170 have wintered, and are in excellent condition, out of 173. Mr. Ernigh has also a fine residence and farm, but his time and energies are largely given to the apiary. He has abundance of Alsike clover in the vicinity, and himself pays but little attention to bee-pasture.—R. F. Hollermann. *Brantford, Canada, April 23rd.*

ASSOCIATION.

WARWICKSHIRE BEE-KEEPERS' ASSOCIATION.

The sixth annual general meeting of the members of this Association, held at the Grand Hotel, Birmingham, was well attended. In the absence of Lord Leigh, the President of the Association, Mr. R. Ramsden, of Knowle, presided. There were also among those present the Rev. W. K. Suart, and Messrs. W. Madeley, C. Barwell, Jacob Rowlands, J. Blackham, J. L. Hawkes, Dugard, Pearson, T. Cox, Walton, Ward, J. N. Bower (hon. sec.), Ingerthorp (assistant secretary), C. W. Summerskill (expert), and a number of ladies.

The Chairman, in opening the proceedings, spoke of the importance of bee-keeping to cottagers and others as a means of eking out their incomes.

The Committee, in their report, stated that they were glad to be able to record the steady progress of the Association. The receipts from all sources, including a balance from the previous year of 30*l.* 11*s.* 2*d.*, amounted to 154*l.* 6*s.* 3*d.*, and the expenses to 144*l.* 17*s.*, leaving a balance of 9*l.* 9*s.* 3*d.* in hand. The number of members on the books at the close of the year was 412. During the year two tours had been made by the expert and much appreciated; lectures in connexion with this Association had been delivered at various places, and the bee-tent had been exhibited at a number of horticultural shows. The quantity of honey sold at the honey depôt had been three times greater than in any previous year.

On the motion of the Chairman, seconded by Mr. W. Madeley, the report and accompanying balance-sheet were adopted.

Lord Leigh was unanimously re-elected President, and the Lord Bishop of Worcester, the Earl of Denbigh, Lord Newport, Lord Windsor, the Hon. H. A. Adderley, the Hon. C. L. Adderley, the Hon. A. C. G. Calthorpe, Colonel the Hon. C. G. Scott, Sir R. N. C. Hamilton, and Sir Charles Mordaunt, were re-elected Vice-presidents. The Committee and Honorary Treasurer and Auditor were thanked for their past services and re-appointed; and Mr. Bower was unanimously re-appointed honorary secretary, and the assistant-secretary and expert were also re-appointed.

Subsequently, a most interesting lecture, followed by a discussion, was delivered by the Rev. W. K. Suart, on 'Modern Methods of Bee-keeping.' The lecture was illustrated by a series of admirably executed crayon drawings, the result of original research into the subject by Mr. T. Prince, of Bradford. Also an interesting collection of nests, &c., was exhibited by Mr. Hiam, of Astwood Bank.

Votes of thanks to Mr. Suart for his lecture, and to Mr. Ramsden for presiding, brought the meeting to a close.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

*** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of April, 1886, amounted to 1113*l.*

[From the Statistical Office Returns, supplied through E. H. Bellairs, Esq., Wingfield House, Christchurch.]

SCOTCH HONEY COMPETITORS.

[335.] I can assure you that, notwithstanding the unfounded accusations brought against us Scotch bee-keepers and honey dealers by John D. M'Nally, we all the same heartily reciprocate your opinion, that if such practices did exist they are most reprehensible ones, and would certainly meet with the utmost condemnation of every honest exhibitor. But I am pleased to think that if such statements were made by the same writer on this side the border they would certainly be treated with silent contempt. Inexperienced youths who, for the sake perhaps of a little notoriety, persist in scribbling fictitious nonsense, are easily disposed of amongst intelligent bee-keepers; it is only a pity that those tactics oftentimes stir up warm discussions, when, if the personal objects in view were really known, such writings would at once pass into oblivion. Misunderstandings and differences of opinion may exist amongst us, but I hope, Sir, you will always find it the rule in Scotland that we

value honour too highly to condescend to such contemptible resources as are brought forward by John D. M'Nally. Let him produce the name of any such individual from the many he knows, let the charges be manfully put forward, and let the schedules and rules of the associations so imposed upon be submitted to the verdict of the public, and then I have no fear of the final issue.—SCOTCH BEE-KEEPER.

For several years I have taken a deep interest in apiarian exhibitions throughout Scotland, and am much surprised to find one (who has no practical knowledge of such Exhibitions, and whom I have every reason to believe is not even the happy possessor of a single swarm of bees) bringing forth such glaring charges regarding the honesty of our Scotch exhibitors. It is evident that our champion has seen very few of the schedules regularly issued in connexion with all our district shows, because, unless in the case of open classes and for competitions, rules are inserted even more stringent than those J. D. M'Nally would have us all to adopt. In this matter, therefore, he is only copying the rules laid down by one of our largest district Shows, viz., the East of Scotland. Even the Caledonian, which is distinctly an exhibition open to the world, has strictly confined classes; and it is rather noteworthy in connection with this open competition that J. D. M'Nally's own brothers have for several years taken full advantage of its open provisions, and have carried off leading honours with entries simply bought in the open market for the occasion. No one, however, can call this an infringement of rules, seeing that it is the 'exhibit only' which is judged. It is wise, therefore, in all county and district Shows to have confined rules, so that the 'exhibitor' is also rewarded according to his merits.

I presume that J. D. M'Nally must know that whatever rules and restrictions are made, it is the duty of the judge and committee to see that no one is allowed to exhibit fraudulently. I therefore maintain, Mr. Editor, that your views are those generally held by every prominent bee-keeper in this country, and from the close intimacy which I have had for years with many of our leading Scotch apiarians, I can, without hesitation, challenge the statement which J. D. M'Nally has thus publicly brought forward, and demand a single proof that such a system is prevalent amongst us. This proof has been publicly offered in order to get up an argument, let it now be forthcoming, and then the subject will be fully and fairly discussed.—J. H.

OUR LITTLE DIFFICULTIES.

[336.] Bee-keeping is not always a bed of roses. Have none of my readers ever realised the utter disgust one feels when one's smoker goes out in the midst of opening a hive whose temper, one knows to be, to say the least of it, rather uncertain; or when some tool or other that should have been in one's tray-barrow is not there; or when one's frame-rest has been left in the bee-house; or the lid not on one's frame-box, or a hundred other little *contretemps* only known to bee-keepers. To shut down the hive, or to leave it and go fetch—well—is a cross between fire and fryingpan.

Two or three seasons ago I had been bothered a good deal in this way, and every time I muttered to myself, 'What a nuisance it is; I must have help.' I sounded the representative of my stable; he looked glum. I gave gentle hints to my crabbed old gardener, who views all modern ways of bee-keeping rank heresy, and all I got was,—in words, 'Don't ye see, maister, us be mortal busy just now;' in manner, 'Us hates them there new-fangled ways of yourn.' To which one's riling reply did not go for much, 'No, you prefer a brimstone cushion.'

Well, things went on that year for some weeks, the weather got muggy, one's temper and the bees' temper were in like ratio, when all at once a change came for the better—or the worse, I leave to my bee-keeping brothers and sisters, bee-keepers, or bee-encouragers.

One morning I was reading my letters and papers at the open breakfast-room window—we have but one in-and-out post in these remote parts of north-west Devon—and I heard a step on the gravel, and a respectable, motherly-looking widow crossed the front and came up, and with a very low bob and in broadest Devonshire, 'Does your honour want a handy boy?' I immediately bethought myself of 'my little difficulties,' and jumped at the idea like a trout at a fly in the big stream which runs through the park. 'What can he do, my good woman? Can he clean a horse?' 'Lor a-bless 'e, he clean our donkey fine.' That was something,—but not bees. Leading up I said, 'Can he clean boots?' 'O yes, your honour, till he sees his *praty* face in 'em.' On thorns, I mildly asked, 'Do you keep bees?' The hit was unlucky. 'No; us don't.' 'Do you like honey?' This was better. 'Oh, us do; and so does John and the little uns.' A few more questions and a couple of one-pound sections for the little ones and for John to improve his taste with an eye to the future, and the lad was hired, and the sections were placed in her basket—not in her umbrella, which looked as if it were capable, and was made a receptacle for—well, presents, veils, perquisites, &c., and away she went, and I flung up my paper and said to my better half, '*Now* I have got a bee boy.' Man proposes, God disposes.

On the following Monday morning, on going into the garden, I saw, already monopolised by gardener, as unlikely-looking, ugly young lout as you would see in a day's march. However, his looks belied him, and he turned out a ready help in the bee-garden, and generally had his wits about him, and the right thing in the right place, and my temper improved and all went merry as a wedding-bell for some weeks to come. When all at once something happened in the bee-garden. I forgot what it was—sheep, or cattle, or colts, or something, got into it, and a hive was upset, and we both rushed out to put things straight 'without our armour on,'—unveiled in fact. Bees furious. We, too, hasty and hurried. The bees thought we had capsized them. The end of it was we suffered considerably about the face, the carriage was just coming round, and I went out and saw no more of 'John,'—my hopeful John, that evening. And I came home and went to bed, and dreamt of the pretty little rosebuds I had seen playing lawn-tennis, and what not, and awoke to our little difficulties with a vengeance. John's mother appeared at the open window once more, not this time with 'front serene' (it was at least an inch off her forehead), and there was something about her bonnet ribbons which gave me a pain somewhere, and a surmise that all was not as before.

'Plaise, your honour, us be coombe to say as our John's beauty be aal agone, and he ca'ant asee out of his head; and neighbours do asay it be a dratted shame to treat a poor body's son so.' 'Passons ought to know a better—and not go to keep no savage bees to stang people.' 'That her beautiful boy'—oh dear, how much does a mother's view err—'was a spilt for ever,' &c. Memory fails me to tell all her rancorous words. I was dumbfoundered and thought of the future and all it boded.

Well, I lost my help, and have had to do my bee-work alone ever since; but that was easier than my old gardener's 'told-you-so' kind of look for many a day after. Oh, how the old sinner chuckled some time after when the bay horse (he hates the sound of a bee) would not suffer himself to be put to because the bees smelt the fresh compo on his harness, and buzzed about his ears, till all had to be taken some distance down the road ere they could be tackled, and then the stage-whisper as one started: 'Baes didna use to be like this, till they was a put into strange housen.'

Let me end my not an A I yarn I hope, by a tale Charles Lever tells of a little disaster, illustrating the relations

between an improving landlord and an untutored tenant. The agent is presenting the tenants to the worthy innovator, who inquires into the condition of the grumbling and dissatisfied recipients of his favours.

At length on a tenant presenting himself—whom the agent fails to recognise—the worthy Baronet turns to the figure before him, which, with face and head swollen out of all proportions, awaits his address with sullen silence.

'Who are you, my good man? What has happened to you?'

'Faix, and it's well you be axing that same, my own mother wouldn't know me—'tis all your own doing entoirely.'

'My doing,' replied the astonished landlord, 'what can I have to do with the state you are in, my good man?'

'Yes, it be all your own doing, and may ye be proud of the same. *'Twas them blessed bees you gev me.* We brought the divils into the house last night.' And where did we put them? Out into the pig's corner. Well, after Katty and the children an' myself was awhile in bid, the pig goes rootin' about the house, an' he wasn't aisy till he hooked his nose in the hive and spilt the bees about the flure, and then, when I got out of bid to let out the pig that was a-roarin' through the house, the bees settled down on me and began stingin' me, an' I jumped into bid again wid the whole of them afther me, to Katty and the childer, and there, what with the bees abuzzing and astinging us under the clothes, out we all jumped agin, an' divil such a night was ever spint in Ireloind as we spint last night. What wid Katty an' the childer aroarin' an' aballin', an' the pig atarin' up an' down like mad, an' Katty wid the besom, an' myself with the frying-pan, flattenin' the bees agin the wall, till mornin', and then the sight we wor in the mornin', begor! it is ashamed of yourself, ye ought to be.'—Rector, *Buckland Filleigh, North Devon.*

ON THE BEE'S STING. [252.]

[337.] Mr. Chapman takes exception to two opinions said to have been offered on this subject, (1) that barbs are natural to the hymenopterous ovipositor, and (2) that they are disadvantages to the bee. I cannot find that I made an assertion that barbs were a distinguishing characteristic of the hymenoptera; yet even were I guilty of raising this ghost, your correspondent himself lays it by stating that 'on the ovipositors of the hymenoptera there is a capacity for developing on their serratures.' Admit development and abortion may with logical propriety be claimed.

By instancing various insects (Hymenoptera, Hemitera or Diptera, Cynips or Cicads, Wasps or Bees, it mattered not) I endeavoured to show the identity of the sting with the ovipositor in anatomical construction, and argued that the ovipositor was being adapted to another purpose, for offence or defence, seeing that there are races of stingless bees, and races of varying grades of pacific disposition, of clumsiness, or ignorance, up to our own irascible, half-bred demon, perhaps apicing the pyramid with Apis dorsata, which is said to attack almost any living thing without cause. Again, I urged that the sting, *as we find it used*, is imperfect, confined as it is to imperfect females, and only used by them on forfeiture of their own lives.

Your correspondent must, I think, admit that if the barbs were 'improved out of existence,' as he puts it, the whole genus Apis would have cause to be grateful; and I am sure the enemies of the honey-bee would not dread its weapon the less were Providence in its good time to permit the barbs to become rudimentary, and the sting consequently extractible, any more than the present enemies of the wasp can afford to leave out of reckoning its barbless sting.

> The bee who stung and flew away,
> Would live to sting another day,

all the better for that teaching which experience gives.

At present, some races of bees when much irritated will sting posts and rails, or anything they can get their weapons into; and on the other hand, some insects with smooth ovipositors will use 'a bare bodkin' in the same way. How cruel it seems that, when alarmed by our smoke into filling its pouch with salvage store, the bee is almost unable to punish the robber incendiary!

Watch a bee trying to sting when well filled, and its sting will be seen to protrude from a straight abdomen in the most insensate fashion. We call it taming, subduing, and quietening them. The honey-sac is under the abdomen just in the most awkward place to allow the bee to bend its body (after seizing hold of the object with six pairs of pincers, as purchase or leverage), sufficiently for it to inflict the wound. Such painful muscular effort would in all probability cause regurgitation of the honey. I am surprised to find Mr. Chapman advancing (*Mors janua vitæ*) that the barbs are a positive advantage to the bee. Nature is too skilful a general to say, 'So long as the city be saved (?) the lives of my soldiers matter not;' she is constantly enabling her subjects to economise their forces, and waste as little life as possible, just as our generals are careful of the units of an army. As for the quantity of poison left in the wound, in the case of the wasp and nettle, it must be conceded that sufficient is used to produce the desired effect, viz.—future avoidance. If the barbs in bees' stings became aborted, some eighteen or twenty apertures behind the rudiments would still remain to pour out as many drops of poison on insertion and withdrawal.

A month ago appeared the first volume of Mr. Cheshire's new work on bees and bee-keeping, far and away the finest work on the scientific aspect in the English language, and I find on p. 184 the following, which I am tempted to quote as conclusive corroboration of my assertions. 'Automatically the bee's sting is analogous to the boring ovipositor of the saw, gall, and ichneumon flies. When we call to mind the strange piercing power of the sting, and its venomous effect, we shall have no difficulty in accepting the statement that the difference between the sting and the ovipositor is rather that of function than of structure.'—R. A. H. Grimshaw, *Cray Hill, Horsforth, nr. Leeds.*

CARBOLIC ACID VAPOUR *V.* SMOKE.

[338.] The several references made in last issue of *Bee Journal*, as to the effects produced on bees by the use of carbolic acid, are, in my opinion, quite in accordance with the experiences of those who have expressed them: without doubt great care should be exercised in the use of same. The acid itself should on no account enter the hive, as well might you allow your burning fuel from smoker to enter as well as the smoke; the acid is the generator of the vapour, the burning fuel the generator of the smoke.

The writer of 'Useful Hints' gives one special experience in support of this, which, without doubt, is what any one might expect under such circumstances:—The floor-board of a hive was washed with a strong solution of carbolic acid, and then placed in its position at bottom of hive; this being saturated was a continued source of uprising vapour, and would continue to give off such for several hours, and very likely days; this was quite sufficient to kill or stupefy any bees. What would any one suppose would be the result of injecting smoke into a hive in a continuous stream for an hour? Why in less than five minutes the inmates would be killed, and yet this continued stream of carbolic acid vapour did not kill all the bees in that time; is not this a fair proof that the carbolic acid vapour is of less deadly a nature than smoke?

I do not advocate the use of carbolic acid *in* the hive; in my letter of the 29th April, page 189, I distinctly mentioned a mishap I had last summer; it occurred in this way: I had used my smoker in precisely the same manner as Mr. R. A. H. Grimshaw advises; everything went well until I had finished several hives; by this time some of the acid had escaped from the sponge, no doubt in infinitesimal portions, and collected round the perforated diaphragm, giving this an extra tilt, it was run into the hive, the consequence being most of the bees 'cleared out quick!' Having seen the result of my accident, I at once removed floor-board and a comb which had a small quantity on it; in doing this I removed the source of the supply of vapour, and in a short time the bees all settled down comfortably. Every bee-keeper, no doubt, has had the misfortune to give a straw skep an extra puff or two of smoke, and found the bees in a state of stupefaction when he turned it up. The cause of this is not far to seek, he has injected the smoke for so long a time that the air inside has become displaced by the smoke; the same would happen if carbolic acid had been placed *in* the hive, it would keep giving off vapour, until this had displaced nearly all the air, and the results would be the same.

It is only the vapour that must enter, and this being so volatile quickly escapes again, or is fanned out by the bees, but there having been only vapour injected, there is no source from which more can be formed, and the hive is clear at once. Let any one, for experiment, take his smoker and fit it up in the same manner as Mr. R. A. H. Grimshaw, and inject some of the vapour into a hive and try how long the hive retains the smell of it, but be very careful not to let any acid even touch the frames or combs, it will be gone in less than two minutes.

A cloth saturated with carbolic acid solution, as recommended in 'Useful Hints,' laid over the frames, no matter how effectually it is wrung out again, will leave a source of carbolic acid vapour on the frames wherever it touches, and will act in the same manner as if you were gradually injecting smoke, no doubt, in this instance, in a very mild form, and not sufficient to make it dangerous.

With a fumigator the vapour only is injected, and quickly leaves the hive after it has accomplished its work—frightening the bees.

If Mr. R. A. H. Grimshaw had practically tested his method of fumigation he would not have asserted what he does in his third paragraph. As my and many others' experiences are directly opposed to it, I will guarantee to make an ordinary colony gorge by means of carbolic acid quicker than by smoke.

As the introducer of this system in a fairly perfected condition, I may be biassed in its favour, but having received so many flattering testimonies as to its efficiency has made me feel that I ought strongly to advocate it for the benefit of my brother bee-keepers.

I have not protected the fumigator in any way, so that any one who is practical enough can make them. It is not a very difficult job, the illustration in the *Bee Journal* of the 29th April is correct in all details, with the exception of a stop on each wire to prevent the sponge shifting over the inlet,—added since.—W. B. Webster, *Wokingham, Berks.*

DRIVING.

[339.] In my capacity of local secretary for our County Association, I met with a method of bee-driving quite new to me and which I thought might interest some of your readers. I was riding along a country road in a district where the bee-keepers were unknown to me when I espied in a garden some straw skeps. I at once dismounted, and on entering was fortunate enough to find the owner smoking his evening pipe before his cottage door. I introduced myself to him, and in answer to my query as to how the bees were doing he told me that 'one was a good strong lot, but t'other were a lot he took the honey from last year.' 'Then you understand how to drive them?' said I. 'Well,' he said, 'I've got a fashion of my own which I reckon is a deal better than some o' the plans I've seen tried. A neighbour o' mine here wanted some bees last autumn, and I told him he could have mine if he'd take the trouble to fetch 'em. Well, he were about here more than an hour with one lot a-smoking of 'em out, and I reckon I do it all according to my plan in about ten minutes.' Of course I was anxious to know what his plan was, so I asked him to explain. In order to make the story short, I will not attempt to give it in his words, but his method was as follows. Proceeding just in the way of close-driving, putting an empty skep rim to rim with a full one and a towel round to keep in the bees, he places them in an empty tub with the full skep under and then slowly filling the tub with water until the full skep is covered. The top one is then removed, when the bees are found clustered in it. He said, 'I've done it that way many a time without killing a dozen bees and not half the fuss or bother like there was with that smokin' and beatin' the hive wi' sticks, and the honey quite as good, because it is all sealed over and the water don't hurt it a bit.'—South Glos.

HONEY-COMB LETTERS AND DESIGNS.

[340.] Press of work has hitherto prevented me from adverting to the articles written on the above subject in the *B. B. Journal*, of dates 1st and 8th April last. Honey-comb designs have been in vogue for a number of years, such as stars, circles, &c.; but these are very simply done, and it is only in regard to comb letters and figures that I claim the honour of being the inventor. Permit me to describe how it is done.

Take a super made of $\frac{3}{4}$ wood, say $16 \times 8 \times 3$, outside measure, and you want the year 1886 built in it; get strips of foundation about one inch deep, draw out the shape of the figures in super; then fix the strips of foundation with a smelter in centre where the figures are to be built. Thus fixed, get thin pieces of wood separators about $\frac{3}{4}$ less in depth than the inside of the super, so as to allow the bees free access under; on these separators fix little corner-pieces to form the circles and bends in such a way as to prevent the bees from misshaping the figures. These blocks are then fixed in the super with fine brads, to draw out easily when the super is finished. Any letters or figures can be done by putting the foundation in the shape wanted, and filling up the interstices in the same way as already stated. My first attempt at letter-building was in 1882. I then tried the word HONEY. The super was too long, and the bees only finished out ONE in the centre—H and Y were unfinished; these I cut off, leaving ONE complete, which I exhibited at Stranraer Flower Show that year. Every year since I have done more or less at letter-building.

The late Mr. Pettigrew also tried the letter-making. His method was to take pieces of wood, 6 in. square by $\frac{1}{2}$ in. thick, and fix a strip of foundation on each piece of wood in the shape of the letter wanted. This was let into a large hole in the crown of his skeps, and the bees drew out the foundation. When taken off he then cut off parts of the letters where too thick with a knife, and thus shaped each letter to his mind. There was never any honey in his letters by this method, and therefore they could not be called 'honey-comb letters.' His handiwork was shown at the Oldham Exhibition in 1883. In *Gleanings* of May or June 1884, Root describes another way of building letters in frames, by getting two letters made in each frame and filling up the corners and spaces with blocks. I have never seen Root's method worked out, and therefore I cannot say how it does. As usual, our American friends brought it out in 1884 as

something new. Stars, circles, and suchlike, are more easily done than letters. It is only necessary to fix the foundation in whatever way you want the bees to build, and almost invariably you will get it. The idea only requires a little taste and ingenuity, and once known is very simple. Lastly, the making of letters and designs is not a paying 'spec,' unless a large sum can be got for them. Several bee-keepers to whom I have shown the idea have sold at exorbitant prices.—WM. MCNALLY, *Glenluce, Scotland.*

FOUL BROOD.

[341.] I was hoping to find more answers to my query *re* the above from bee-keepers who have experienced it, and was somewhat disappointed at only the reply of Mr. W. B. Webster, and he having only used phenol in its cure. As it seems to me that this is a subject that will affect us bee-keepers more and more in the years to come, through the purchase of foreign queens and the exchanges of bees and hives, it would be very interesting, I think, if apiarists who have experienced this scourge would state how their hives became contaminated with the germs of bacilli, as I think it would be shown that in the majority of cases it was imported through the purchase of strange bees or second-hand hives; and also the means they took to eradicate it, and with what success, so that we might see which was the more efficacious remedy,—salicylic acid or phenol!

It was through the purchase of about a dozen hives from a bee-keeper *who was giving up bee-keeping* that I first got foul brood among my bees; and unquestionably the party knew of it, as he had cut the combs from all the frames most neatly, leaving no signs of any diseased cells. Other bee-keepers had purchased from him a few days before, and in these cases also, I afterwards discovered, foul brood had appeared; and in several cases where the owner had but just commenced bee-keeping, he lost all his bees, his hopes were blighted, and he gave up the thing in despair. I had all my frames boiled in a furnace, and the hives scrubbed with soda, soft soap, and boiling water; but I suppose there was some crevice not properly cleansed of the germs, for, anyway, in the course of a few weeks, foul brood broke out in one hive, and then in another, until I had about six affected with the disease. This was at the time so much was being written and said about 'Cheshire's cure,' and I suppose I had from his agents quite a dozen bottles of the 'cure;' but, alas! it didn't cure them a bit, as it was in midsummer, and the bees would not take the medicated food. I poured it into the combs, but, no, I could not get the bees any better; in fact, the complaint rather increased. I spoke to one county expect, who '*knew nothing about it, and didn't want to.*' When a few days after, Mr. Summerskill, of the Warwickshire, called in, and he at once said, 'Fumigate them with salicylic acid;' and he gave me a sketch of a fumigator, which I had made at the tinman's, and which is almost exactly the same as figures in your useful little manual, Mr. Editor (although this was before the last edition came out). I fumigated them at evening every three or four days for about three weeks, and these stocks are now some of the strongest in my apiary. I found another, that was all right last season, a few days ago with a few diseased cells, and at once adopted Hilbert's method, and I do not fear of the consequences. I also have placed in every hive a small piece of camphor, as I strongly believe in the old adage that 'Prevention is better than cure.'—G. H. G.

FOUL-BROOD.—A TEST OF DISEASE IN THE QUEEN.

[342.] A short narrative of my experience with foul-brood, and of my endeavours to establish a test as to the healthiness of the queen, may be of interest to your readers, especially after your 'Editorial' of the 7th inst., and the request of one of your correspondents for advice.

Last year I tried in vain throughout the whole summer to cure a stock infected with *Bacillus alvei*. The stock (a very strong one in June) dwindled right away in spite of constant efforts with phenol, clean hive and fresh frames. Two other stocks slightly affected during the same period yielded to treatment in ten days. Why not this one? In September I sent the queen to Mr. Cheshire, and he was good enough to inform me that 'though a fine-looking queen both her ovaries were very badly diseased with *Bacillus alvei*.' How I wished I had dethroned her three months earlier, but I had no idea she was diseased, and I was a comparative novice—how was I to know? This spring I have *Bacillus alvei* in three stocks (the same three). In two of them the disease is disappearing under phenol, but in the third the disease is obstinate, and my last year's experience rising before me like a nightmare, I thought perhaps the queen was diseased. How could I test it? As the queen was a young one and a good layer, I was loth to lose her, so I placed in the centre of the brood-nest a fresh comb quite empty and continued the treatment. I wanted to establish this test:—If nothing undesirable manifests itself in that comb the queen is all right, if anything *does* show itself she is diseased. In ten days 50 per cent of the cells in that comb contained rotting grubs. This seemed to me to be decisive, so I took her majesty away and sent her to Mr. Cheshire, who very kindly examined her, and pronounced her to be diseased. Thus my test seems to be established, but only in a solitary instance; and I trust I may never be in a position to repeat it: but some of your readers, doubtless, who are troubled with this pest may like to try it, and to recount their experience in the *Journal*. In cases of *Bacillus alvei*, the question of the healthiness of the queen seems to me to be the all-important one, especially as Mr. Cheshire tells me that he very much doubts whether his treatment will cure *any* adult bee. This being so, the only safe thing to do whenever the disease does not begin immediately to yield to treatment, is to re-queen. There are two other points of interest upon which Mr. Cheshire has expressed his opinion to me. One is that a diseased queen *can* lay healthy eggs, for the ovaries are only locally affected so far as his observations go; and the other is that it is possible for a diseased egg to hatch, and (under treatment of course) to develope into a perfect and healthy bee.—WM. GEO. SMITH, *Caistor Cottage, East Finchley, May 13th.*

FOUL BROOD.

[343.] I beg to say that I have had three years' practical experience of foul brood, and having used both salicylic acid and phenol I can speak of them with some confidence. For more than a year previous to the appearance of the disease I invariably used the solution of salicylic acid and borax when feeding, but notwithstanding this precaution my bees got foul brood in 1880, from which date to the end of 1882 I had salicylic acid in constant use, according to Cowan's and Hilbert's formulæ. I also used it by sublimation, and in fact I did not spare time, trouble, or expense, but without producing the least appreciable results. In the beginning of 1883 I used phenol with success by melting the contents of an ounce bottle of Calvert's carbolic crystals No. 1 and pouring it into a quart of cold water, about a teaspoonful of this solution being mixed with a pint of syrup and given to the bees. When honey was very scarce they would take it in even stronger doses, and the result was that the bees cured themselves without my taking any trouble, as by that time I had almost despaired of getting rid of the disease. My bees are now in perfect health, and I have never been obliged to destroy a hive or even a frame.

I am aware that salicylic acid has been successfully used as a remedy for foul brood, but I wish to express my thorough conviction that it would not have cured my bees, even supposing that I continued using it to the present time. In my opinion the substance used to eradicate foul brood should be disinfectant in action, readily soluble in water, and volatile at ordinary temperatures, and of these properties salicylic acid only possesses the first, while carbolic acid possesses all three.

I think I have discovered another remedy for foul brood equal in every respect to carbolic acid, and superior to it in being inodorous, but, pending the result of experiments, I am unable to say anything positive about it at present. When I am it shall become public property.—ROBERT SPROULE, *Fairview, Co. Dublin.*

[We have also had practical experience of foul brood, and succeeded effectually in eradicating it with salicylic acid, in the same way as a great number of large apiaries have been cured. If our correspondent failed, it is probably owing to the reasons given on page 216 in our answer to R. T. Collisson, and not any fault of the agent employed. We should be glad to welcome any simple and effective remedy for foul brood, and one that will not be so objectionable to the bees as carbolic acid, and that can be used at any time, like salicylic acid, without injury to them or the honey.—ED.]

BACTERIA.

[344.] I for one am pleased to see that you have at last put down your foot upon bacteria. We have heard enough about them of late. I never take up the *Journal* without anticipating the discovery of another species, and I am rarely disappointed. I would respectfully ask,—nay, *entreat* Mr. Cheshire to pause in his headlong career. I don't mind a few, although I did hope our little friends were free from the nuisance. I don't object to the Bacillus Gaytoni, and I could bear, though with increasing reluctance, a Bacillus Cowani, Hookeri, Hucklei, and other well-known names, including, for the sake of auld lang syne, a Bacillus Bartrumii (pardon my ignorance if I have not correctly Latinised the names); and if an extra prolific or virulent one should be discovered, then let it be known to the scientific and the bee world as the Bacillus Cheshirei. But I would have the bacteria end there. We have had too much of them already, and when, in your issue of May 13th, Mr. Cheshire declares that there are no less than eight species in a slide of Mr. Sissons' queen's blood—awful thought!—I instantly cry, and I am sure the bee world would join in loud chorus, 'Enough! enough! No more bacteria! Let them rest in peace where they were before you disturbed and unearthed them by your scientific probing!'

I am glad, therefore, Mr. Editor, you have put your foot down upon the accursed bacteria, although I personally wish it could have been done with less than four columns of the *Journal*—space too precious to be wasted upon bacteria this time of the year. It would perhaps have been nice wholesome reading about Christmas, when, practical bee-keeping having ceased, theories of all kinds may be legitimately discussed. I therefore skipped most of the four columns, and shall all future columns on bacteriology, only agreeing most heartily with the concluding sentence, in which you, Mr. Editor, surmised, very correctly, that your 'readers had had enough of it, and would not wish it continued.'—JOHN PEEL.

P.S.—I am keen on a Huckle bacillus. The bee-world owes him much.

JOTTINGS.

[345.] *Size of Sections.*—Mr. Turtle (306) thinks it a pity a standard size section cannot be decided on. I myself consider it has. According to Mr. Turtle's own words, at the opening of his letter, he says *knowing that most bee-keepers* use the $4\frac{1}{4} \times 4\frac{1}{4}$ sections. Then, sir, we four-and-a-quarters are in the majority, and the $4 \times 4\frac{1}{2}$ size section users in a hopeless minority; and as things in general from the Government downwards are decided by the majority, the thing is as good as settled, only requiring adoption by the parent Bee-keepers' Association. This subject was fairly thrashed out some time back in the *B. B. Journal*, and one of your Selected Queries answered by a selected few of the vanguard of British bee-keepers ought to have carried some weight. Unless some valid reasons had been discovered in the oblong section the square does not possess, those among us who have visited the shows held under the auspices of the various Associations during, say the last six years, know very well that in no single instance has a prize been awarded to any crate or rack of sections otherwise than the $4\frac{1}{4} \times 4\frac{1}{4}$ size. So that, speaking on behalf of a large number of working men, who I know are using the ordinary sized section, and also in favour of uniformity of size which has been fostered and developed by the compilers of show schedules everywhere for several years past, I appeal to the committee of the British Bee-keepers' Association to settle the matter by the votes of the majority.

Our friend, 'J. B.' (308), has initiated the bee-keepers of his district with the wrong pass-word to the craft—re-sections. Would 'J. B.,' on consideration, wish the thousands of crates made and sold during the past decade, and also the large number held by the various dealers and manufacturers of bee-appliances ready for the coming season, relegated to the lumber room of obsolete bee-gear; also the hundreds of thousands of sections, aye I think I may say millions of sections, at present on hand of the ordinary size, consigned to the flames, to suit the caprices of a few, when those few crates in use made to hold $4 \times 4\frac{1}{2}$ can easily be made to hold the ordinary size by putting a piece of $\frac{3}{4}$ inch board inside. But if 'J. B.,' 'A. T. W.,' 'W. J. T.,' and others, prefer the size they have adopted let them stick to their first love. As regards the argument that the sections ought to be of a size to fit the standard frame, who, I ask, is there among advanced bee-keepers that toys with fixing sections into ordinary frames? Those few that still work on the back supering system use frames the width of sections. Experience has proved to me that bees will work in sections over the brood nest when they will not look into sections at back (with excluder zinc between). The little difficulty about the crate of 21 sections not covering the frames will I opine be shortly removed by the makers of broad-ended frames, who, by a little alteration of their machinery, leaving the distance pieces a little longer, and 'presto' the job is done, the crate will cover the openings and also conserve the heat of the hive.

Wasps.—Queen wasps everywhere; have never known such numbers as this spring; day after day I have been waging a war of extermination, but still they come. Early in the morning I have hunted for them among the wraps of my few straw skeps, and in the heat of the day I have been in search of the yellow-jacket brigade around the fruit trees.

Glazing Sections for Show.—'Friar Tuck' need only glaze his sections and not his crates also, but I may tell him if he glazes his sections he will be far more likely to find a customer for them at the show than if he sends them in a glazed crate. Then again, unless 'F. T.' has his crates made to take glazed sections, he will find a difficulty in getting them in after they are glazed (let him see to that matter in time). The screw tops he mentions with cork inside will be sufficient, and a word as to bee-keeping for cottagers; there is not the slightest doubt of the *bona fides* of the intentions of the pioneers of Bee-keeping Associations working for the good and benefit of cottage bee-keepers, but there is nothing that can confine any particular occupation to one class, and so others, seeing

the possibility of making a profit by keeping bees, have embarked in the industry, and in many instances, I fear, to the disadvantage of the *bonâ fide* cottager, who finds himself outmatched in honey production both in quantity and quality by his more intelligent and painstaking neighbour. The only hope for him is to move with the times; in fact, keep abreast of the times, and I maintain, if the labourer takes an interest in his bees, with the machinery of the County Association at his command, he can keep to the fore. Our friend 'F. T.' speaks of his prices of honey; it was certainly a low price if the quality was good, but if he got forty to fifty sections off each hive, I guess he realised a total his father and his grandfather never dreamt of.

Mr. Dobbie omits two good bee-plants, viz., the dandelion and the sycamore-tree.—WOODLEIGH.

POLLEN GATHERING—QUICK WORK.

[346.] Many of your readers may not be aware of the incredibly short space of time in which a bee will gather a large quantity of pollen and return with it. Most of the following records were taken on Easter Monday between the hours of one and three. The time at which each hive was opened, was recorded, and the numbers indicate the number of minutes which elapsed before the entrance of the first bee with a *good quantity* of pollen. Where they carried but little they were not counted. To gather it the bees had to fly over about three acres of land with intervening trees, buildings, and hedges.

Carniolans.	Ligurian Hybrids.	English.
8	13	12
10	15	11
	7½	8
	10	8
	12	8
	20	4
		15
		15
		30
		31

Those of the highest number were in a bad temper and much disposed to sting.—J. RUDGE, *Dursley*.

STINGS AND GLOVES.

[347.] I am quite pleased to see 'A Cottager's' experience, which quite agrees with mine. I have stocks which are quite a pleasure to work with, others which *at times* are ungovernable (and these latter are the ones, by the way, which led me to abandon the smoker—when they are at their worst it is of no use, when at their best it is not needed). Now, given these two facts, irritable bees and the pain and inconvenience of stings, why should gloves not be worn? Granted that they are clumsy—one gets accustomed to work with them, and as for their causing loss of bee life I don't admit this. If I manipulate carefully it is not often that a bee leaves its sting in my gloves, but should it try give it time and it will usually withdraw its sting by a rotatory motion, except it be one that is determined on death, when it stretches itself flat on its chest in intense anger and draws itself away from its sting. But this would occur just the same on the bare skin. Again, I have often seen bees prick the gloves slightly with the sting and repeatedly, till a vulnerable part was reached—say the wrist when the under gloves are too short, and then in goes the sting deeply. In this case the gloves I should say *prevented* the destruction of the bee. With all deference to those that are bee-proof, I must still conclude that if I were compelled to manipulate my hybrids without gloves or veil I should prefer to place myself on the retired list of bee-keepers. While on the subject of stings, I have observed two things not so far as I know mentioned. First that after the sting has become separated from the bee it continues to eject the poison by intermittent and visible contractions of the poison-sac; second, if the nearest tip of the newly detached sting be slightly inserted in the skin the motions of the sting cause it to penetrate more deeply. Can anyone inform me from experience whether indiarubber gloves are efficacious or not? They would be less clumsy.—PAIN NO PLEASURE.

Replies to Queries.

**** In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[297.] *Bee Stings.* (Melissa.)—No remedy that I have yet tried is as efficacious as tincture of arnica; it takes away the pain at once, and generally prevents any swelling or after-irritation.—F. D.

[298.] *Bee Stings.* (A Cottager.)—I would like to say a few words and give my experience respecting stings. In the first place, I think it depends a great deal on how bees are handled, for if they are manipulated clumsily, they will assuredly sting. The movements of manipulators should be slow and evenly, and I am afraid gloves would add considerably to the clumsy handling of frames; and, in the next place, the odour of a sting remains longer, I should think, in a glove, than anywhere else, but the proper thing to do is to blow some smoke on the place stung; and then again a great deal depends on how a sting is taken out of the flesh—rub it off, not pull it out with finger and thumb. I use a smoker and veil, but no gloves for me; and I feel confident I could manipulate even without a veil and not get stung, unless a bee would run up my sleeve and get squeezed there or with my fingers. I drove fourteen straw skeps last year, and five this year, and I did not get more than half a dozen stings doing the lot, or my manipulations during last year and up to date. I use dried rotten wood in my smoker, which is the best if obtainable.—G. T.

[298.] *Bee Stings.*—Some of your correspondents make inquiries concerning inoculation for bee-stings. Why, if they cannot summon up courage to allow the bees to inoculate them, or if the bee-sting is too virulent at first should they not try nettle stings at first, for the action of both bee and nettle stings is due to formic acid? I, for my part, suffer nothing from the sting of the nettle, though of course I feel the original prick, but then I am proof against bee-stings, their stings producing no greater result than that of a flea-bite.—E.

[328.] *Untimely Drones.* (E. H. G.)—Your query is not sufficiently explicit to give any decided opinion. Did you see the drones in the hive during winter, as you say they were unquestionably there? Again, where have they gone to? Have you seen them turned out, or noticed any dead ones lying about since? Such an event as drones six weeks ago is not in itself a very extraordinary event; it would be more so to find them in a stock having a fertile mother during the winter.—W. B. WEBSTER.

[329.] *Hiving Swarms.* (Farmer.)—It is not imperative that you leave them in the skep until evening. After they have settled down quietly in the skep, remove it to where your frame-hive is to stand; you can shake them down in front of same, after tilting it up from floor-board, any time afterwards; but I prefer the evening, as they do not then fly about so much.—W. B. WEBSTER.

[329.] *Hiving Swarms.* (Farmer.)—I usually get my swarm into its permanent dwelling as soon as I can, and shake the bees into a bar-frame hive among the combs or in front, and let them run in. They seem more likely to settle down quicker this way, owing to the presence of comb or foundation, than if left in empty skep. It is also a saving of several hours' work and loss of time to the bees. —G. H. G.

[329.] *Hiving Swarms.*—I adopt either plan successfully. Shade the hive in both cases.—A. C. S.

[329.] *Hiving Swarms.*—'Farmer' should at once shake out his bees in front of bar-framed hive. I carefully fasten a sheet all along the front, under the entrance, and having

thrown the bees upon it, tilt them towards the entrance by holding up the corners of the sheet. With me they have always drawn in very rapidly, and I have sometimes taken the hive to its allotted place within half an hour of swarming.—CHARLES E. CUTHELL.

[330.] *Thinning Foundation.* (C. E. Cuthell.)—The cause was either the sheets of foundation, not being fixed exactly correct in frame, so that midrib was not in centre; or else combs adjoining had been built with cells longer owing to frames not being correct distances apart. This would compel the bees to lessen the depth of cells on the new frame of foundation.—G. H. G.

[330.] *Drawing out Foundation.*—The foundation was perhaps given when the bees had too much room in the hive or too late in the season.—A. C. S.

[330.] *Thinning Foundation.* (Charles E. Cuthell.)—Your hive was not sufficiently populated to cover both sides of foundation. This often occurs late in the season, when no more storage or breeding space is wanted by the bees. You should not put thin foundation in body of hive; this is only intended for the supers.—W. B. WEBSTER.

[331.] *Honey.* (J. D.)—By your own observations, you may reckon that when there is an abundance of honey-producing flowers in bloom, such as clover, and bees working hard, there is a 'glut' on; when the flowers die off, and bees hang listlessly about the entrance, or try to rob other hives, honey is not coming in.—W. B. WEBSTER.

[331.] 1. *The Honey Harvest* may be said to commence when the honey is beginning to be sealed over. 'J. D.' will easily find out when the harvest is over. The term 'honey glut' merely means that honey is coming in very fast. 2. *Comb Designs.*—Better leave fancy work alone till a little experience in ordinary management is gained.—A. C. S.

[See W. M'Nally's letter, p. 224.—ED.]

[331.] *Honey Glut.* (J. D.)—The time this occurs differs considerably all over the country, and some years there is scarcely any. In this part of Worcestershire we get ours at the time of the white Dutch clover being in blossom.—G. H. G.

[332.] *Fixing Foundation.* (Dr. Craigs.)—Bar-frames are always a nuisance in an apiary unless the top bar is saw-cut, and unless this is the case the foundation must be fixed as you would do it in supers or large sections, viz., with melted wax.—G. H. G.

[332.] *Fixing Foundation.*—Have a small gluepot (or a make-shift for one) with wax in the inner vessel and water in the outer one. Let the wax be quite melted, hammer an old teaspoon to a narrow point and let it stand in the wax till hot, hold the foundation in position and run a stream of hot wax along the edge of the foundation (which must be cut quite straight to lie close to the top bar) by pouring from the spoon held at one end, that end being tilted up. The hot wax will melt the edge of the foundation as so make a firm joint. Treat the other side similarly. Fuller instructions in a back number by Mr. Hewitt; I cannot give the number as it is lent out. I am breaking up all my saw-cut frames.—A. C. S.

[332.] *Fixing Foundation.* (Inquirer.)—I should purchase fresh frames, they are cheap enough. If you do not do this, and do not care to have a saw-curf made, run some molten wax from a spoon—having its point pinched—along the top of foundation, at its junction with frame; then wire it with three wires, and press wires into foundation with a button-hook.—W. B. WEBSTER.

[333.] *Queen Fertilisation.* (Doctor Craigs.)—No; it is directly opposed to all theories, observations, and experiences of all entomologists and bee-keepers. I should be of opinion that your bees had swarmed without your knowledge; is there any possibility of such an event?—W. B. WEBSTER.

[333.] *Queen Fertilisation.* (Dr. Craigs.)—I do not think a queen-bee is fertilised more than once in her life; but I believe it quite possible and likely for the bees to supersede one when she becomes worn out or injured. How often do we find a Ligurian stock of bees become hybrids in the course of a season or two, proving the superseding of the old queen for a young one of their own rearing. There is a great deal of difference in the egg-laying powers of different queens. I have one now five years old, the head of a most prosperous stock.—G. H. G.

[334.] *Dry Comb-foundation.* (Subscriber.)—The bees will clear away all mould from the foundation; if you wish to bend or alter the wax, by placing the sections in a warm place you will soon be able to put them right.—G. H. G.

[334.] *Dry Comb-Foundation.* (A Subscriber.)—The foundation will become soft on exposure to warmth; bees do not take as readily to old foundation as to new. I should put fresh starters in the sections.—W. B. WEBSTER.

[334.] *Last Year's Foundation.*—Hold it before the fire for a few moments, both sides, till it assumes its former appearance.—A. C. S.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[348.] *French Work on Bees.*—Will any one kindly give me the name of a French work corresponding in character to *Modern Bee-keeping;* clear and simple, and such as an educated person could easily understand?—F. D.

[349.] *Dead Bees.*—On examining my hives on the 12th inst. (it had been raining all day) I found there were about 100 dead bees on the alighting-board and inside about a pint of dead and dying bees. Can any of your readers tell me what is the cause of it?—J. W. S.

[350.] *Spreading Brood.*—If, although one has been careful to keep dummies crowded with bees when spreading brood in spring, hot sun and cold winds suddenly kill so many bees that two or three frames of brood are left without bees, is it better to remove these frames, brood, and all, or allow it, chilled as it is, to remain, in hope some of it may hatch out?—O. W.

[351.] *Rearing Young Queens.*—I found in a second swarm (cast) last year, three weeks after swarming, twenty-seven young queens in all stages. The skep was about half filled with comb, and worker brood also laid symmetrically and in all stages, but no drones. The queen was found and to all appearance was all right. Has any bee-keeper had a similar experience, and to what reason does he conduce for the rearing of the young queens by the bees? Several were running about the combs mixed with the ordinary workers.—G. H. G.

[352.] When supering a hive containing six frames with a twenty-one 1-lb. rack of sections, what is the best way of stopping up the open space where the rack does not cover the frames to keep the bees from getting into the space behind the dummy board?—YOUNG BEE-KEEPER.

[353.] *Sections containing Brood.*—What would be the effect of placing sections containing brood (having been hung in the hive) in the section racks? Would the queen be more likely to visit the other sections in the racks? Would the bees take to the sections more readily?—J. C. T.

[354.] *Finding Queens.*—I have as yet only kept black bees, and find, in manipulating them, the less smoke used the better, especially in finding a queen; the chances of speedy success are greater if no smoke is used at all. I should like to know if these views coincide with those of your other readers.—CHARLES E. CUTHELL.

[355.] *Early Destruction of Drones.*—In one of my hives drones are being hatched daily, but no sooner do they appear than the worker-bees kill and turn them out of hive. Can any of your numerous readers tell me the reason of this, and what, if anything, should be done? I have been and am still feeding with syrup.—HUMBLE BEE.

Echoes from the Hives.

Alfriston, May 15th.—I have not heard of any swarming yet. We have had very little good honey weather as yet. Weather is cold and rainy, and to-day we had a small shower of snow. Apples and other fruit-trees are nearly in

full bloom, rape the same. Rilk is just beginning to open; this is one of our best honey plants, although the farmers do not like it among the corn.—YOUNG BEE-KEEPER.

Bromsgrove, Worcester, May 16th.—We have been experiencing here the last five days most miserable weather for the bees; rain, rain incessantly from morning to night, and in many parts of the country nothing to be seen but water for miles. The barometer is now rising, and *when* the fine weather appears, our bees will have a right glad-some time of it. First swarms in this district I have heard of occurred at Goosehill Farm, Hanbury, on Friday and Saturday, May 7th and 8th. Queen-wasps are more plentiful than I ever remember seing before. Large numbers have been destroyed round here.—G. H. G.

Dublin, May 13th.—We had splendid weather up to Sunday, the 9th instant, but ever since it has rained without ceasing, accompanied by cold east winds, more like December than May.—C. A. J.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

TREF EGLWYS.—*Finding Queen.*—See 'Extractor,' p. 217.

DOUBTFUL.—We should suggest, if you desire to have a swarm, that you should make it artificially after one of the usual methods: this would be preferable to your hazarding a failure, which would probably be the result of the plan you propose to adopt.

A YOUNG BEGINNER.—As you appear to have failed in driving, we should recommend you to wait until the bees swarm, and then put the swarm into a frame-hive and leave the stock until twenty-one days, when all the young bees will be hatched out. The honey may then be taken and the bees put into a second frame-hive.

RENWOOD.—1. *Securing Foundation.*—If the foundation when inserted in the sawcut should prove loose, it might be securely fixed by a few French nails passing through the wood and wax. 2. *Early Swarm.*—May 5th was an early date for a swarm, but we should not attribute this to your having unduly spread the brood.

J. M. P.—The comb forwarded has an unpleasant smell, betokening incipient foul brood. The interiors of the capped cells have dried up.

G. LEDGER.—The two bees forwarded are Ligurians; but this does not determine that the bees in the hive are pure; they may be hybrids.

G. H.—1. *Sections.*—The rack of sections may be placed on twelve frames. 2. *Sealed Stores.*—The sealed stores should be uncapped, as required by the bees.

A. E. A. E.—We should not extract the frames. Continue building up your hive, and you will b prepared for the honey harvest when it comes.

J. MASON.—*Bacillus depilis.*—Your bees are suffering from the above disease. Use phenol according to Mr. Cheshire's directions. All dealers in appliances supply it in bottles at 1s. each. See 'Useful Hints,' p. 383, vol. xiii. *B. B. J.*, for description and cure of disease.

ALBION.—*Pollen-Combs.*—Do not put the combs containing old and hard pollen in the centre of the brood-nest, or you will seriously retard the work of the colony. Place them on the outsides of the nest, and the bees will soon remove the pollen and prepare them for receiving brood.

J. D. MORDLE.—*Hive, Bees, &c.*—1. The 15-frame size is best, as the whole number of frames need not be used except when required. 2. The Italians. They are most gentle and good workers, and queens very prolific. Obtain good imported queens. 3, 4. Cyprians, or Syrians, next, but they are not so gentle. The crosses of these races with Italians are best of all, both as regards temper and work.

AMATEUR, *Hexham.*—1. *Beer in Syrup.*—No harm will be caused. The reason of acceptance when refusing plain syrup is that the smell attracted them, while the slight smell of the plain did not reach them. 2. The appearance you mention does not indicate dysentery, which would be shown by dark brown smears inside the hive and on the alighting-board. It is unusual, although not a sign of disease.

A. F.—*Parker's Foundation Fixer.*—Fasten the fixer to a table or bench; put a little honey or thin starch where it is to touch the foundation. Slide the section under the lever against the stop; put the foundation under, one-eighth of an inch, raise the back end of lever and turn up the foundation at right angles against the point, and with a sliding motion draw back the lever. If the wax is not very hard, the foundation will be found to be very firmly fixed.—Cowan's *Guide-Book* (p. 64).

G. CLARK.—The bees forwarded are evidently affected with the bee-disease which goes under the name of *Bacillus Gaytoni*, or *depilis*. This is evident from the hairlessness and the shiny surface of the abdomen. See reply to J. Mason.

ENQUIRER.—1. *Hive with bad Smell.*—As you do not describe the smell, it is impossible to say the cause, as you say you found no visible symptoms of foul brood. The camphor can do no harm, unless sections are being filled, when it might possibly communicate a flavour. 2. *Solution of salicylic acid.*—This is nearly insoluble in water. Add 1 ounce borax and 1 ounce salicylic acid to 4 pints of water, and add of this solution 1 ounce to nearly a gallon of syrup. 3. *Ligurianising.*—You can hardly Ligurianise your apiary from one stock of Ligurians, as the young queens will almost certainly mate with black drones, and their progeny will be hybrids. The method of queen-raising has been frequently described in our columns, and you will find it also in any good text-book. It is certainly very unusual to find black bees still existing in a stock which received a Ligurian queen last August. Possibly a weak stock of blacks has united itself to the Ligurian stock.

EKAON.—*Swarming artificial, &c.*—1. Your proposed plan will do, but the operation must be performed at midday, when bees are flying, and you must fill up the new hive with frames of foundation or comb. The stock to be divided must also be full of bees and brood. 2. Saw-dust will do, but cork-dust is better. 3. Decayed apples, &c., are visited by the bees on account of the saccharine matter they contain. 4. Piling up one hive upon another, or super upon super, to any number which the bees can occupy is usually termed 'storifying.' *Doubling* is working with two hives only, of precisely the same dimensions, and interchangeable in all their parts. The frames of upper hive are extracted and returned as often as filled. 5. A sixteen-frame hive is too large for storifying. One containing twelve standard frames is quite large enough. 6. The number of supers required will depend upon the colony, the honey yield, and the size of the supers. Two or three racks of twenty-one 1 lb. sections, given as required, will usually be found sufficient in a fairly good season. If body-frames are used for storifying, one or two, according to bees and season. 7. No. The additional box must be given above, not below. 8. Ten or twelve standard frames.

A. W. C.—*Preventing Swarms.*—You may prevent the issuing of swarms by giving room in the hive by the frequent insertion of sheets of foundation. Your question is rather obscurely worded, but we presume that this replies to it. 2. *Inserting Frames in Hives.*—The frequency depends upon the strength of the stock. Unless the seven frames are all filled with brood, and a large population hatching daily, one frame a-week at present would be too often.

F. J.—*Camphor in hive when sections are being filled.*—It is probable that the honey may acquire the taste and smell. Extract a little from the stock hive and test it. If that has no taste or smell, the sections are still less likely to be affected. It would certainly be safer to discontinue the use of camphor while sections are being filled.

Inquirer.—The comb with bees thrust into cells was not affected with foul brood. The bees had died of starvation.

Inquired.—The three larger wasps were, as you presumed, female or queen wasps. The fourth was a wasp that is found in all parts of the world. It delights in making its nest in old posts and rotten wood, but has no objection to take advantage of a ready-made excavation. Its specific name is *Odonerus quadratus*. It has very pretty markings.

Cumbrian.—1. *Effects of Cold Weather.*—Your bees have ceased to carry in pollen and the queen to lay eggs on account of the cold weather. You may have also chilled them by undue examination. 2. *Foundation.*—The sample of foundation sent is too dark for sections; none but the finest quality should be used for them.

Thoroughness of Bees.—The feverish anxiety, the intense eagerness, the earnest individual effort, the unceasing perseverance, the seeming (only seeming) recklessness, the unwearied diligence, the strong desire, the single intention to make hay while the sun shines, to gather honey and pollen when the opportunity offers, with the immediate seizure of every such opportunity; the haste to be rich, but in a perfectly legitimate way, by its own unaided labour; the evident full enjoyment of work for its own sake and for the community, the steady application, the undivided attention, the untiring earnestness, which is not diverted for one instant from the great work in hand; the immediate and unwearied attention to details as part of a whole grand scheme, though the end may be unknown to the worker. The doing with the whole might, and force of mind, and power of intellect, and strength of body and soul, and help of conscience, the little, or much, brought to our hand to be done, are some of the true lessons to be read, studied, pondered over, learnt, made our very own, and incorporated with our daily life, from the little busy bee, of which Dr. Watts said—

'How doth the little busy bee
Improve each shining hour,
And gather honey all the day
From every opening flower.' Apis.

Bee Gloves.—There have been many inquirers as to the best bee gloves. The best and cheapest I know are the *smooth* white leather ones made by Reynolds, High Street, Andover, to which gauntlets of net or holland to extend over the elbows, with elastic run in, must be attached. These do not aggravate the bees as any kind of tanned leather does, which they seem to sting for the mere fun of it, even if hung upon the hedge. Of course I hardly ever wear gloves myself, but with very vicious bees I always find these efficient.—W. E. Burkitt.

Wasps.—About a week ago I killed over an hundred, and there are hundreds more. I find them plentiful about the gooseberries and pears. They seem to me to get larger in size than they were when I first noticed them.—James Holme, *Ambleside, Windermere.*

Queen-wasps I find wonderfully numerous this year, though I destroyed all neighbouring nests last year. I killed fifty-seven last week on our gooseberry-trees with my finger and thumb (they will not sting if you do not tickle them), but since Sunday, May 9th, I have not seen one.—W. E. Burkitt.

Queen Wasps.—I never saw such an extraordinary number of the above as there are this year. They seem to feed especially on the blossom of the black-currant, which is out here in abundance. One day last week my gardener and myself killed more than twenty in my small vinery, and on several occasions we have killed as many as five or six in a day.—A. H. Martin, *Evesham.*

J. I., F. D., and others, write to the same effect respecting the prevalence of female wasps.

Stings.—Seeing the answers in *Bee Journal* to 'A Cottager,' perhaps my experience of Sunday evening last would not be out of place. When at about 5.30 p.m., I was in the garden, and got stung in the forehead above my left eyebrow. The sting was immediately taken out, and carbolic acid applied with a drop of water after, as advised in *B.B.J.* I need hardly say that it burnt and tingled for about an hour afterwards, but this I would not mind, it is the dreadful way I swell that makes me wear veil and gloves when manipulating, and run from the approach of a bee when unprotected. Well, to give an idea of what a solitary sting can do for me, I must explain that I am writing this on Tuesday morning with one eye only, my left one being closed up, as it has been since a quarter to eight on Sunday evening, and my left cheek stands out with fatness, and would, I am sure, compare with the fattest prize baby ever seen; my forehead, too, has developed most marvellously. I must add that this is far from my first sting, and that I always swell dreadfully. My doctor says that is owing to the softness of the tissues of the skin.—Albion.

Bee-houses.—For some time past our eyes have been attracted by the neat appearance and the interior arrangement presented by the engraving in our advertisement columns of a bee-house manufactured by Messrs. Boulton & Paul, of Norwich. Some bee-keepers do not hold in high esteem these houses, but many who are cramped for garden-room find them an advantage. The Rev. C. Raynor and Mr. A. I. Root, of Medina, Ohio, have had much to say in their favour. Those advertised are very portable, and can be easily put together. They have, as all manipulating rooms should have, revolving windows for turning the bees out. The roofs are of corrugated iron, and the sides and lining to roof are bee-proof. The manufacturers may be depended on for their workmanship.

Received from Messrs. Howard and Meadows a Raitt Fume Chamber, with a spray diffusing brush, a description of which will be given next week.

A match-box has been received containing, according to a correspondent, a red insect which had been troubling him. The box had been broken in transmission through the post-office, and the insect had escaped.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Buatt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Lyon, F., 94 Harleyford Road, London, S.E.

COMB FOUNDATION.

Abbott Bros., Southall, London.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

Special attention is called to the following arrangements:—

Prize-lists for the Bee Department at the Royal Horticultural Show at Liverpool are now ready. Entries close June 10th.

Prize-lists for the great National Show at South Kensington, to commence on July 30th, will be issued in the course of the present week. Entries close June 30th.

The pamphlet on the management of Straw Skeps has been translated into Welsh, and is now ready for sale.

SOUTH KENSINGTON EXHIBITION.

The following donations have been added since our last issue:—

D. A. Thomas	£2	0	0
Collected by Miss Collins, Essex District Secretary	0	10	0
Miss Eyton	0	10	0
Previously acknowledged ...	141	15	0
	£144	15	0

PARENTAL AUTHORITY.

The discussion at the last Quarterly Conference of the motion moved by the Rev. F. S. Sclater was very opportune, though some of the delegates seemed to think that it was unwise on the part of the parent Association to make any more stringent regulations than at present exist, because of the probability of some of the children turning restive and kicking over the traces altogether.

It is a point we are constantly insisting upon, though too often forgotten, or at least misunderstood, and that is, that the affiliated Associations, not only collectively but individually, get back from the parent Society much more than the value of the affiliation fee. In a former number we discussed the advantages of having some central authority, and so now we would the rather consider its judicial power.

The need of some court of appeal is obvious to any one, and that this naturally should be the B. B. K. A. is still more obvious; though, of course, the final court of appeal is the general body of bee-keepers, who are members of one or more of the Associations.

For instance, it is quite possible that the B. B. K. A. might lose touch of the general (bee) feeling on some matter. If it was on some matter of vital importance, at the next annual election of the Committee only those would be returned who promised to rescind the obnoxious edict, and again the B. B. K. A. would represent, as we believe it does now, the true feeling of British bee-keepers.

The rule that every affiliated Association should send in its annual report and balance-sheet is not only for the chance perusal of bee-keepers, but that the Central Committee might be able to judge how each and all were progressing.

It might occur that some or more were not worthy of being affiliated, or that there was evidently a strong party in opposition to the existing county authority. It would be then the duty of the B. B. K. A. to establish some *modus vivendi*, or, if that were impossible, to consider whether the erring Association should be allowed to continue in affiliation, or whether it would not be better to recognise the opposition.

This, of course, would be an extreme measure and only to be used with great caution, for if it were not approved by the general body of bee-keepers, the B. B. K. A. would be inevitably wrecked and without benefit of clergy.

If the B. B. K. A. were to have no control whatever over the acts of its children, it would be simply on a level with the County Associations, and not the fostering parent of each and all.

BRITISH BEE JOURNAL.

To a great extent the departure of an enterprise from its ordinary course is an experiment. In the history of the *British Bee Journal* there have been several of these departures. These have scarcely been the outcome of any disposition of our own will, but have been in a measure forced upon us by the development of the industry of which the *Journal* has attempted to be the faithful exponent. Perhaps it may not be possible to separate these two—the rise and progress of the honey industry in the country and the continued expansions of the *Journal*—from each other. It would be more in accordance with facts to say that the two have proceeded *pari passu*,—both mutually helpful of each other in their onward march. The honey industry has advanced by leaps and bounds to its present position, while the *Journal* has during the same time passed through diverse transitions.

We are not now desirous of stating the increase of bee-keeping, or of quoting statistics in support of our statement, the fact is patent to all; suffice it for the present to say that bee-keeping and honey-producing is rapidly becoming one of the most important 'minor' industries of the country, of the extent of the future of which we have at present but a faint idea. The numerous county Associations; the large and increasing numbers comprised in these societies; the publications which treat of the economy of the bee, either wholly or in part; the Honey Companies, established for the sale of pure British honey; the interest taken in bee-culture by every village and hamlet, all proclaim the truth of our assertion. We have rather at present to note the continued progress of the *Journal*, and we feel it is our just duty and our grateful privilege to state to our numerous supporters, subscribers, contributors, and last, not least, our advertising friends, that our last departure—its production as a weekly Journal—has eventuated in a success. Our circulation has been maintained, our advertising connexion has been increased. The *Journal*, like the bee it illustrates, has now passed through various stages. In the bee we have, first, the egg, then the larva, then the pupa, then the imago, or the perfect insect. The *Journal* had its beginning as a monthly; it was launched forth on the world with much diffidence and many tremblings; but, fortified by the encouragement given to, and the interest taken in, the adventure, it in course of time developed into a bi-monthly; and, increasing in strength, we took heart of grace, and advanced to a weekly. Can we consider our work yet to be complete? Have we no more changes to pass through? Have we arrived at the imago or perfect form of publication? We cannot assert that we have; our full purpose cannot be said to be accomplished, or our aspirations realised, till the *British Bee Journal* is published weekly at the price of one penny. For this, however, we are content to hope and wait; and we struggle and press forward to this goal, being assured that if we continue true to the trust reposed in us,—if we prove increasingly anxious to merit the support which has been so generously accorded us, the time will soon come when we shall be able to take the position to which we aspire, and that time will be shortened in proportion to the assistance which our friends will give us.

In the meantime its present weekly publication has brought us into closer communion with our readers; it has given us a wider scope for our operations; it has enabled us to reply to our subscribers with greater facility; and its special features of Selected Queries and Replies to Queries have elicited much interest.

We are pleased to say that we are daily gaining new subscribers. The *Journal* has many friends in Scotland and in Ireland; it finds its way to New Zealand, Australia, Cape Colony, Canada, the West Indies, to the United States—in fact, we may say without exaggeration that it is read wherever the Anglo-Saxon language is spoken. It is our desire and our ambition to maintain the position we have achieved, and with gathered experience to continue to progress in the future.

We again thank our friends and contributors for their kindly countenance, and trust that they will continue to render to us their welcome assistance and patronage.

USEFUL HINTS.

As an Englishman is known, all the world over, by the interest he takes in the weather, our usual opening remarks will at least assure our friends of our nationality if they serve no other purpose. Since our last, then, the bright anticipations of 'glorious summer' having at last arrived have been sadly nipped in the bud. An Essex gentleman, writing from Barnard Castle on the 13th inst., states that—'The moors of North Yorkshire and Durham are entirely covered with snow,' and accounts of storms, floods, and cold ungenial weather, are the rule and not the exception. So sudden has been the change from summer heat 'to winter's cold' that supers have been removed by many, and feeding recommenced. But again we have a pleasant change, which, let us hope, may be more lasting, and that we may yet obtain the wished-for harvest from our bees.

The Norwich Show, for which we are happy to learn that there is a large entry in all classes of the Apiarian Department, is likely to prove a great success. The paragraph of explanation respecting the requirements of the 'hive for doubling and sectional purposes'—that is to say, the best hive for general purposes—in our issue of May 13th is entirely satisfactory, and has conferred a boon on all who intend to exhibit in this class, as there can now be no shadow of doubt as to what the Association requires.

Smoking Swarms.—On more than one occasion we have known swarms to be destroyed by injecting smoke. The novice, anxious to see 'how the swarm is getting on,' armed with his smoker, in fear of stings, injects puff after puff into the newly hived swarm, on the second or third day's occupation of its new domicile, forgetful that the honey-sac of every bee is gorged, and the small amount of comb built most fragile; when, as a natural consequence, the poor bees, alarmed and excited, disgorge their honey, the whole population becomes a clammy mass, and perishes in the midst of its fallen combs. We are cognisant of cases where smoke has been administered to a swarm, with the view of *quieting it*, before despatching it by railway, or otherwise, to a friend or purchaser, and the swarm on its arrival has been found defunct from the above-named result. Since our 'Hints' are intended to warn the inexperienced against 'how not to do it' as well as to teach them 'how to do it,' let such make a note never to use smoke, carbolic acid, or other 'intimidant' in the case of swarms. Indeed, during the summer months, while the honey-flow is on, it is best to dispense with all irritants and intimidants whatever, and simply to manipulate 'with quietness and confidence' whenever manipulation is necessary. We must, however, except such operations as removing a super, or introducing a queen.

Watching for Swarms.—June, the great swarming and honey month of the year, is close upon us, and all apiaries should now be closely watched or swarms will be lost. Many a new beginner loses swarms without being aware of his loss. Often and often have we, on returning home after a day or two's absence in June, found swarms on the neighbouring bushes or trees around our apiary, notwithstanding the fact that our gardener and his boy have always *strict charge* 'to watch the bees.' Lawn-mowing, or some other gardening operation, requires attention, the bees are left for *just ten minutes* (half an hour?) and the swarm departs! 'Most sure to go, sir, when we isn't looking!'

Reversing Sections.—Bees finish the tops of their combs more perfectly than the bottoms, and this remark applies to sections, as well as to brood-combs. When a case of sections is half completed, by inverting the whole we may, therefore, get our sections better and more evenly filled. By looking down between the rows of sections we can see when the tops are finished. If at that time the honey-flow continues unabated, and our colony is strong, let the section-case be inverted, and

another empty one be placed beneath it. The inversion, and giving room below, will cause the bees to work with renewed energy, and the sections will be finished alike at top and bottom. But failing invertible cases, the system of tiering up should not be neglected, since bees will often swarm when a case of sections is only half filled, while if more room had been given swarming would have been prevented. As soon as the brood-chamber is crowded with bees, and the tops of the combs are becoming white, from the addition of new wax in lengthening the cells, is the proper time to put on sections. Too much attention cannot be paid to conserving the heat around the section-case. So changeable is our climate that if 'super coverings' be neglected and a cold or frosty night, or a stormy period of a few days occurs, the sections will be deserted, and the work delayed. The best sections are invariably those which are most quickly completed.

Foundation for sections should be the thinnest and lightest that can be procured, and it is immaterial whether the sections be filled, or merely the V-shaped pieces be used. Not so, however, with brood frames. If these be only half filled the lower half will be built out with drone comb—a most serious disadvantage, leading to the production of an excess of drones, and ruining the colony in many cases. If you do not wish for drones, let your brood-frames be filled as nearly as possible with worker-celled-foundation.

Crowding into Sections.—It is a common practice with many apiarists to reduce the size of the hive by removing the outside frames when putting on supers, thus confining the bees to the central, or brood, frames, when, from want of room, they are more easily induced to take possession of the upper storey. The chief difficulty in effecting this is the exclusion of the bees from the vacant spaces, caused by removal of frames, at the sides of the hive. Unfortunately few division-boards are made sufficiently close-fitting to prevent the passage of bees, which, obtaining an entrance, soon fill up the spaces in preference to working above. Before giving the supers, therefore, the close-fitting of the division-boards must be ensured, and strips of wood to cover the spaces from front to back of hive must be provided. These are always useful in manipulation when removing frames for extracting or otherwise, and should be of the length and thickness of the top bars of frames, varying in width from one to three inches and a few of ¼ inch only to fill up gaps.

Direct Introduction of Queens.—Mr. Alley, an American apiarist of note, and author of a book on queen-raising, gives the following directions for immediate introduction of fertile queens:—'Subdue the bees by tobacco smoke at evening, and remove the queen of the hive. After closing the hive give more tobacco smoke, but not sufficient to cause the bees to fall from the combs. Next, allow the new queen to run in at the feeding-hole or at the entrance, and continue to give more or less smoke for a period of fifteen minutes, being careful not to stupefy the bees.' Mr. Alley successfully introduced eight queens in this way in two hours, and the bees were at work again the following morning as if nothing had happened.

Changing Places.—When the bees of a colony—from whatever cause—have dwindled, but have a prolific queen depositing from two to six eggs in each cell—an occurrence by no means uncommon at this period—we have found the old plan of changing stands with a strong colony answer remarkably well. On a fine day, when bees are in full flight and honey is coming in rapidly, cage the queen of the weak colony on a brood-comb, and remove the hive to the stand of one of your strongest colonies, taking the latter to the stand of the former. On the following morning the queen may be released, and the weak hive will soon become strong. It is not necessary to cage the other queen, there being no danger to her from the few stranger bees returning from the fields. If the above directions are strictly followed fighting will rarely ensue; but if there is any disposition to rebel a few puffs of smoke will soon quell it. Where it is desired to equalise stocks, in preference to obtaining a large honey yield, there are few methods superior to this.

Queen Wasps.—*Apropos* of the conclusion arrived at on this subject in the closing paragraph of the interesting article on 'female wasps' in our last issue, we give the following, written some twenty years ago: 'There need be no alarm at the number of queen wasps which have made their appearance, as it by no means follows that they will produce a nest a-piece. For several years I have noticed their abundance or scarcity, and certainly for six in succession the numbers in spring and autumn bore an inverse ratio to one another. The first year I noticed it was in 1847, but I believe it was in 1852 or 1853 that some articles appeared in the *Zoologist* on the subject; and it was shewn that out of some hundreds of queen wasps dissected in a year when they were exceptionally abundant none showed signs of impregnation. A friend of mine has sometimes paid as much as 5*l.* or 6*l.* a-year for the destruction of queen wasps, but I never found his fruit (or bees?) less damaged than my own. Aliquis.' In our own experience by this time the fecund female wasp may readily be distinguished from her unfertilised sister by the size of the abdomen, and the leisurely mode of flight. Earlier in the season it is, of course, more difficult.

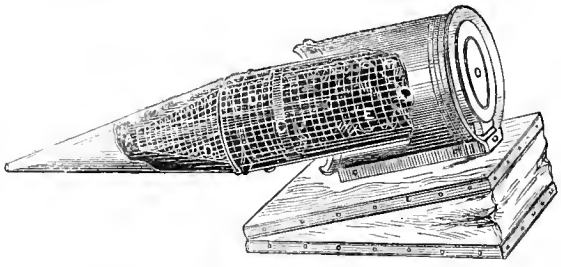
The Kohler Process.—As we are often asked for an explanation of this method we give it concisely below. It is a method of procuring the fecundation of young queens by selected drones, and, therefore, of breeding any race of bees—as Italians, or Syrians, for instance—pure, and was first practised by Herr Kohler, a noted German apiarist, whose name it bears:—When a young queen is hatched out in a nucleus-box (or in any other hive) pure drones of her own race are selected and confined with her in the same box for two or three days. Then on the afternoon of a fine day, when all other drones in the apiary have gone to rest, and the queen is judged ready to take her wedding flight, the hive is opened. As might be expected, the queen and her companions immediately avail themselves of their liberty and a pure breed is secured. Should the first tour prove unsuccessful the hive is again shut up and not opened until the following afternoon. The closed hive should be removed to a dark and cool room, while the bees are under confinement, and removed to its accustomed stand before the bees are set at liberty. Feeding with a little warm syrup before the flight takes place will expedite the process. Baron von Berlepsch, writing of this method in the year 1867—when it was first introduced—says: 'I have tested the discovery at six different times, and on every occasion it has proved successful.' With ourselves it has rarely failed. Sufficient ventilation must be afforded to the hive while the bees are confined, or serious consequences may ensue. Since the Baron's time most prominent apiarists have proved and approved this method.

Correspondence.

THE 'RAITT' FUMIGATOR.

[356.] Before describing the above it is well to apologise to Mr. Raitt for using his name in connexion therewith, Mr. Raitt giving his practical experience with carbolic acid in numbers of May and October *Record* for 1885. It is only just to say that he pointed to the advisability of using carbolic-acid vapour, and I determined that all smoker-barrels for the next season should be so prepared, and the appliance bear Mr. Raitt's name. Such was carried out so far as the smoker-barrels were concerned,

but, from want of time and my co-worker, Mr. Meadows, being at a distance, the opportunity did not occur till now to complete our work. I send you the smoker and carbol-holder, which in its simplicity explains itself, yet it may be well for those who have not the appliance at hand to describe it. It will fit any smoker-barrel which is not less than $1\frac{3}{8}$ inches diameter inside by $4\frac{1}{2}$ inches deep. Smoker nozzles having grate attached, such grate must be removed. The original smoker-barrel has grating at bottom which in practical work I have found far before those placed in nozzle.



A is a funnel which, when rapidly filled, holds sufficient carbolic acid to charge wadding in B; when so charged the diaphragm at C prevents any acid being thrown out of nozzle. D is draught space where carbolised air passes by action of the bellows. E shows position of carbolic charge in original smoker. The holder is made of tinned wire $\frac{1}{8}$-inch mesh, giving but small resistance to draught in comparison with brown paper or other smoke agent used in ordinary way. For fumigating the crude or black acid is preferable. As many persons will still prefer to use smoke, it is a matter of importance that a choice of utilising the present smoker for fumigation at a small outlay should be given. This the 'Raitt' effects.

To save bee-keepers' expense (in these hard times) it may be worth describing how I have applied carbolic in spring and autumn manipulations, using saturated calico for my surplus honey gathering. Take a quart of water, and add thereto one ounce of Calvert's No. 5, at the same time add five or six drops of glycerine (this has no effect beyond the more effectual uniting of the acid and water). In a corked or capped vessel place the mixture, exposed to sun or warmth of room prior to using. Apply the same in spray form, so soon as quilt is removed, from a 2-inch or $2\frac{1}{2}$-inch flat brush (sample enclosed), of course allowing time for filling of honey sacs, and re-application of spray, if necessary, before handling. This method will quiet *any* race or colony, and is far more effective and time-saving than any other method of subduing I have practised. I will not name it a *new* method, for in bee-keeping, as in other things, there is nothing new. A particular application only may be so.

Carbolic-acid vapour is effective, but when used in equal proportions of carbolic acid and Liq. ammoniæ doubly so. For making the best of one's time on expert tours, and in a large apiary, I prefer spray treatment beyond any. The carbolised water not only prevents loss of bee-life in manipulating when properly used, but is a healthful disinfectant to the colony. It can also be applied to any part stung, to gloves if used, or for dressing hands prior to handling another colony, thus destroying the scent which may remain of last colony handled. From recent experiments I have proved carbolic spray will not affect or injure sectional honey, especially such sections as are left to bleach, as recommended by Mr. Simmins. Still, carbolic vapour, either injected by fumigator or allowed to act from calico sheet (originated and recommended by our old friend the Rev. G. Raynor) would be preferable to many, no doubt. I write with no view of defending anything herein given, from want of time, still I shall be happy to answer any queries through the *Journal*.—JOHN H. HOWARD, *The Apiary, Holme, near Peterborough.*

DRIVING, &c., (339.)

[357.]—The way of driving spoken of by 'South Glos' is not new. At Louth (September 8, 1881), at a conversazione held in the Town Hall, I gave a description of same thing, told me by an old cottager whom I met in a railway carriage.—(See *B. B. J.* October 1, 1881.)

PARKER'S FOUNDATION FIXER.—(P. 229.) I take it I must be getting very clumsy in my old age, for I cannot find that that fixer is at all equal to the one of young Abbott's. I want nothing better, I have filled many hundreds of sections with the little roller. I don't like Parker's. My bees have taken three dozen of the twopenny packets of Symington's pea-flour. I don't trouble meself with making artificial flowers,—thank you. I have an oak table in my garden, where I picnic my bees (neighbours' too, I daresay). They (my bees, not my neighbours') rush at the yellow packets before I open them. Sir John Lubbock is right, they understand colour.—J. LAWSON SISSON.

THE WELSH SKEP PAMPHLET.

[358.] Here we have got at last the long-promised 'Skep' pamphlet, the first Welsh publication from the British Bee-keepers' Association, but translated very carelessly, and by some one that knew nothing about bees. There is much difference between a stock and a swarm, but in this pamphlet they are both called 'swarms;' and the floor-board called 'wood-floor,' and that it should be 'hard' instead of 'sound;' that 'a piece of timber should be provided by the entrance for the bees to alight upon;' For 'the space between the sides of rack and the outer casing can be filled in with chaff, and a small chaff cushion pushed in at the end will keep the sections close together;' we have 'The notches between the edges of the box and the outer side can be filled with bags of fine chaff, which will keep the sections safe together.' Not a word is said about the cheese-box, which the English pamphlet says would answer very well as a stand to place the skep upon. We are here told that bees, when swarming, will leave the hive in 'constant multitudes.' For 'upon the floor-board on the ground,' we have 'upon the ready wood floor.' For 'after-swarms or casts,' we get 'after swarming;' and for, 'If these be hived, however, all the queens but one will be destroyed,' we have, 'But if they are got into a hive, all the queens except one should be killed.' Under the head of 'Driving,' or 'Driving out,' as our translator puts it, we are told that 'False swarms must often be made;' and he is very misleading in describing the mode of driving, that the bees, after a minute or two, will begin to 'fly up;' and if the weather be chilly, that they will drive much more easily if, after smoking, we 'pour between each comb about half a pint of warmed syrup, and allowing them about a quarter of an hour for licking it'—very short allowance, we should think. And what next? Well, we are told that bee-keepers now-a-days have a mechanical way of making swarms, called 'mechanical swarming;' and in describing this sort of swarming, for 'During driving keep a sharp look-out for the queen, and if she is seen to go up drive out about half the bees in the hive,' we have, 'Whilst driving them out keep a sharp look-out for the queen, and if she is seen taking her wing send half the bees out after her,' to fetch her back likely. Then we are told to 'put the swarms on both ends of the old stand;' 'That sections holding two or three pounds are now generally used; for 'rising young bees,' we have 'feeding young bees;' for 'flour-candy,' we have 'ground-candy.' After filling the feeding-bottle, we are told to 'place over its mouth a small fire-shovel;' with many other misstatements. We feel very sorry that the first Welsh publication from the Association is marred by so many errors. We do not think that it will be of any good to give it circulation in its present condition, because it contains

so many ridiculous statements: it will only produce greater suspicion in the old Welsh bee-keepers against the 'new-fangled notion' of the modern system. The sooner the better to have a revised version of it adapted for the Welsh. But we hope that the Association will be more careful of it next time. We understand that they intend to bring out a Welsh translation of *Modern Bee-keeping;* we would suggest to them a better plan to get it done—that is, to give a prize, say of two or three pounds, for the best translation of it, or for the best treatise in Welsh on modern bee-keeping, including the subjects treated of in *Modern Bee-keeping* and the 'Skep' pamphlet at the National Eisteddfod, which will be held next year in London. Very likely they would get half a dozen or more compositions, and select the best and get it published, which would be a great boon to the Welsh bee-keepers.—CELFOFYDD CYFARWYDD.

LARGE-SIZE WORKER FOUNDATION.

[359.] I cannot induce my bees just now to build worker-comb. I have placed several whole sheets of Abbott's large-size worker-foundation in two or three strong stocks, and in each case, I am sorry to say, they have worked out *drone-comb,* which is so much waste of time. Kindly inform me through the *B. B. J.* my best plan to stop this.—J. J. CHINNICK.

[The queen could do no otherwise than she has done. Possibly, she was puzzled when she came athwart some cells which were neither worker nor drone size, which you describe as 'Abbott's large-size worker-foundation;' but being larger than worker she naturally dropped a drone-egg into them. The mistake was your having placed such foundation in the brood-nest. The comb should either have been placed behind the excluder or in the supers. We presume the foundation is that described as No. 4 in Abbott's catalogue, the cells of which are four and a quarter to the inch. The catalogue clearly describes the purpose of this special manufacture as 'being strongly recommended for *combs intended for the extractor.*' We can only suggest that these combs should be removed, and true worker-celled foundation substituted in their place.—ED.]

WEBSTER'S FUMIGATOR.

[360.] When I made my remarks on a simplification of Mr. Webster's fumigator, I did not suppose that gentleman intended to manufacture or deal in the article, or I would have left it to sink or swim, according to its merits, in the medium of public opinion on which it has now been launched. Having thus (according to your advertising columns) become a commercial venture, I will wish it 'bon voyage,' and feel sure your readers will join me in thanking the inventor for giving us the idea of more perfectly vaporizing anything which will assist us in manipulating. The public spirit of your frequent contributor is to be admired, yet he did not increase our obligations by hearkening to 'the voice of the charmer' when you, Mr. Editor, invited him to disclose the name of his, or rather Mr. Cheshire's, new agent.

Mr. Webster is wrong when he suggests that I did not practically test the ordinary smoker in the way I pointed out, and that too without any acid itself being blown into the hive, as I had the sponge well wrung out, not saturated, and when not in use, let the smoker stand on the usual end—uppermost position. Phenolised air must, under such circumstances, have been produced equal to that by the Webster process.

I have not had to wait long for a justification in my condemnation of carbolic acid, and that from the inventor himself, for Mr. Webster stated that he had sent one of his fumigators to Mr. Cheshire, whose remarks showed disapproval of the agent used (carbolic acid), and suggested another found to be successful. I cannot give exact quotation, as I have not your file with me.—R. A. H. GRIMSHAW, *Craq Hill, Horsforth.*

[In previous communication, p. 223, col. 2, line 39, *for* Automatically, *read* Anatomically.]

CHEAP HIVES.

[361.] I have just come upon the following statement in an old number of the *B. B. J.*: 'Letters have appeared from time to time in this *Journal,* showing how useful hives could be made out of the rubbish of a grocer's shop, but we have no records how these hives answered.' Perhaps you will allow me space to give a short description of how mine serve. My hives are made after the plan given by Mr. Hewitt in the *B. B. J.* for 14th March, 1884. They hold fifteen of Abbott's frames (Abbott's new method of fixing foundation is, I think, unequalled), and are deep enough to hold another box of fifteen frames for doubling, or else two racks for sections, total cost for hive and set of frames about 5*s.* I have only had these hives in use for two seasons, but although they were buried in a snow-drift for above a week, not a particle of wet had got in. For a makeshift I use 'coffee-with-chicory' boxes; they measure $18 \times 14\frac{1}{2} \times 8\frac{1}{2}$ inside, just the size for standard frames. About five minutes' work is all that is required to make as good as need be. For section racks I get empty Oswego corn-flour boxes, they measure $14\frac{1}{2} \times 12\frac{3}{4} \times 8$ ins. inside. I take bottom out of them, and reduce the height from 8 ins. to $4\frac{5}{8}$ ins., then put in the pieces of wood for the sections to stand on, and I then have a section-rack, after fifteen minutes' work, equal to the best, as it is dovetailed and made of some very fine American wood. I always use $4\frac{1}{4} \times 4\frac{1}{4}$ sections, as they are much more in demand than any other. The boxes for the hive, makeshift, and rack only cost 6*d.* each from a grocer, and altogether I think my apiary is fitted out more cheaply and better than any other near here, more especially I would contrast it with some friends, who have got their hives from Perth, or near it. Their hives are single-walled, and have frames rather larger than standard size, and to pack the quilt properly is a task indeed. I have fitted some of these hives with Pine's metal ends, and have found it a great improvement; also I have made the dummy so that it can be used to contract the hives. Before this was done these hives were bringing a bad repute on bar-frame hives in general, as every one thought them inferior to a good straw-skep, and yet these hives cost 21*s.* The Stewarton is the coming hive for this county, however, because it gives as much if not more honey, and is a great deal easier to send to the heather. Last year I simply fastened the section-racks firmly down upon the broad-shouldered frames, and put cheesecloth over the top and perforated zinc over the entrance, and they travelled safely; but this year I intend to get the floor-board spaced to hold the frames more firmly. Hives with fixed floor-boards should have the entrance extend along the whole front of the hive, as I find that when the hive is doubled nothing less will do. I have lots of feeders, but the only kind I now use are the 'Simplicity,' as described by Root in his *A B C of Bee Culture.* They only cost 4*d.* each from Messrs. Edey & Sons, and will serve either for bar-frame or Stewarton hives. I sometimes make use of my Raynor feeder and also covered 'Simplicity' or Gray's feeder, but not often, as they are more bother. I use the 'Simplicity' feeders behind the dummy. For spring stimulation Simmins' dry-sugar feeder is splendid. Last October I packed several hives so as to prevent upward ventilation, making them very warm all round with chaff; other hives were packed with the ordinary tray of cork-dust *with* upward ventilation, but I cannot say that there was the slightest odds either way. They all wintered safe and well, those contracted to as many combs as they could cover, either upward ventilation or not, did fully the best. You will be pleased, Mr. Editor,

to hear that there are a great many bee-keepers about here who are changing from the skep to the bar-frame system. My *B. B. J.* goes through a good few friends' hands every week, and they all unite in praising it, and saying that they could not do without it, more especially the 'Useful Hints,' which come very handy, as we are always three weeks behind the South.—GEORGE D. CLARK, *Kirklandhill, Dunbar, May 19th.*

PROPERTIES AND CHARACTER OF HONEY AND TABLE HONEY.

(*Continued from p.* 199.)

The polariscope is a very sure means of detecting artificial honey. But as a means simple, expeditious, and at the command of every housewife, the spirit process seems to us for the present to be most recommended. In fact spirits of wine are to be found everywhere, whereas chemical laboratories supplied with polariscope, and chemical reagents, are much less accessible to the public. However, the object of the spirits of wine test is to give us an approximate analysis.

In the face of the above results let us ask ourselves the question: is this article manufactured with honey, glucose, and treacle, in varying proportions, legitimately and honestly the right to the title of honey, which is properly applied to a substance, the produce of bees? No, we are obliged to answer that the manufactured article is not honey; consequently the word should not even be used in connexion with it. The name of syrup is the only one suitable, and for such a designation we will give ample reasons. Scientific analysis clearly supports us in our views. The manufactured article can no more be called honey than a mixture of flax and cotton be called linen, or wool and flax pass as woollen material.

In Germany the justice of these principles is acknowledged, for the custom-house authorities of Prussia have abolished the pernicious, reprehensible, and deceptive terms of table and Suisse honey, and have decided, it not being honey but syrup, to tax it at fifteen marks the one hundred kilos, instead of three marks as real honey.

The terms *table-honey, pure table-honey, Suisse honey,* are only fraudulent expressions, the meanings of which many persons in Germany, and with us, do not understand, and therefore with too much confidence look upon this as an article of superior quality, and even pay a higher price for it than for ordinary honey. The same thing happens with salt, which the public thinks is of better quality when it is called *table salt*, instead simply *salt*. We find the utmost confusion of the term to exist in the statements of the chief agent of one of the principal manufactories of honey in Switzerland, which were given in the pharmaceutical *Centralhalle* in Leipzig. Speaking of adulterated Swiss honey (table-honey), he says: 'All Swiss honey contains an admixture of starch-syrup, because the public desires, and considers as a sign of good quality, honey which will not *granulate*, but remain liquid.' 'Moreover,' he adds, 'that this honey is not sold as pure honey from bees, but as pure Swiss honey.'

The President of the Swiss Bee-keepers' Association has protested and given a correct interpretation of the terms. He points out that the important difference between pure and adulterated honey consists in the first always, and the second never granulating. In Germany honey manufacturers are being attacked on all sides. Let us follow this example.

The following statistics collected by Mr. Ph. Ritter, late President of the Swiss Bee-keepers' Association, give an idea of the increase in the importation of syrup:—

HONEY.—Average annual importation from 1840 to 1879	3256	cwts.
WAX AND WAX PRODUCT	2150	„
SUGAR AND SYRUP	245,070	„

The importation of golden syrup and raw treacle has rapidly increased at the following rate:—

1874	12,648	cwts.
1875	18,302	„
1876	21,096	„
1877	31,638	„
1878	40,966	„
Annual average	26,726	„ *

Then comes the importation of colourless syrup or glucose (starch-syrup):—

1877	8304	cwts.
1878	8842	„
1879	8734	„
Annual average	8627	„ †

From the above figures we come to the following conclusions:—1. That the bee-keeping in Switzerland is not sufficient to supply the demand for honey. 2. That the importation of the constituents of table-honey (treacle and glucose) is increasing rapidly; it is therefore easy to understand why the manufacture of this article increases so rapidly.—The PRESIDENT of the Swiss Bee-keepers' Association in *Schweitzerische Bienenzeitung.*

(*To be continued.*)

Replies to Queries.

[329.] *Hiving Swarms.* (Farmer.)—Swarms are best hived as soon as possible after they are settled down, if 'Farmer' will take every other bar out of his hive, and after shaking or brushing with a wing (which I find is the best thing to manipulate with) according to the position of the swarm, all the bees into a skep, then give the skep a sudden firm shake, he will find nearly all the bees will fall to the bottom of the frame-hive, then cover them up with a cloth; when they get settled down, draw the bars together and dummy them up to the required space, when they will at once commence to build up their comb.—JOHN DIXON, *Great Ayton.*

[331.] *Honey Glut.*—If 'J. D.' has such a thing as a hive with a hinged back or side he can place a frame of sections there with a sheet of glass at back, and will then be able to see pretty well what is going on in the hive without disturbing it. This is a very pretty sight at the commencement of the honey glut if the bees are strong. To do this nicely with the standard frame-hive the $4 \times 4\frac{1}{2}$ sections should be used.—A. T. WILMOT.

[332.] *Fixing Foundation.*—I used formerly to fix my foundation in the frames by cutting the sheets into strips two to three inches wide, and fastening the ends on to the under side of the frame by pressure, in the same way that the foundation is fixed in the sections. In this way I was always able to get nice straight combs. I have a wax smelter, but never use it.—A. T. WILMOT.

[334.] *Dry Comb Foundation.* (A Subscriber.)—If you warm your sections well either at a fire, paraffin stove, or gas, you will find it will look like fresh, and lose any fusty smell. It has the same effect on last year's comb-foundation.—JOHN DIXON, *Great Ayton.*

[348.] *French Works on Bees.* (F. D.)—Mr. Cowan's *Bee-keeper's Guide Book* has been translated into French. V. Rendu: *Les Abeilles*, third edition, with seventeen engravings. This work is approved by the Société pour l'Instruction élémentaire (fifty centimes). Published by M. Hachette, 18 King William Street, Strand.—MELISSA.

[349.] *Dead Bees.*—(J. W. S.)—The 12th was wet with cutting east winds. Bees were blown on to cold, wet ground or on alighting-board and chilled. I picked up a good handful apparently dead, put them in a box and warmed them in front of fire; in a short time there was a joyful hum. Between the showers, and while the sun was out for a few minutes, I relieved the bees. In front of hive they made a 'bee line' for the entrance. 'J. W. S.'s' bees would probably have done the same if similarly treated.—NUCLEUS.

* This is the principal ingredient of table honey.

† This is the other companion of table honey.

[349.] *Dead Bees.* (J. W. S.)—To all appearances, one would suppose that your bees were starving; but with no other particulars but the very meagre ones you give, it is impossible to give a definite opinion.—W. B. Webster.

[349.] *Dead Bees.* (J. W. S.)—I experienced in many of my hives a similar occurrence about this date, and I put it down to the bees becoming chilled on their return to the hive after a journey, and, the alighting-board being wet, they had not sufficient strength left to carry on into the hive proper, where it was warm. It was at this time a continual rain, with sunshine for a few minutes, and then followed a snap of cold wind and rain.—G. H. G.

[350.] *Spreading Brood.*—I think a great mistake is often made by spreading brood prematurely, and I never do it until the season is fairly advanced. The common cottagers' skeps we see around us on all sides are not interfered with, and yet invariably it is these which swarm first. I should never leave frames of brood in a hive unless the combs were well covered with bees, on chance any of it hatching out, as I think there is every fear of the dead brood decaying, and eventually being the means of propagating foul brood.—G. H. G.

[350.] *Spreading Brood.* (O. W.)—It is very exceptional for hot sun and cold winds to kill so many bees *suddenly* as would cover three frames. Allow the frames to remain for a time, and note how they go on. The bees will clear the dead out; but if there are very large patches of dead brood, it is a very good plan to carefully uncap, and syringe the brood out with water, afterwards putting them in the extractor to expel any left, as well as the water; then spray them with solution of salicylic acid solution and dry.—W. B. Webster.

[351.] *Rearing Young Queens.* (G. H. G.)—Your swarm was preparing for a maiden swarm with a vengeance. A number of virgin queens in a hive is not an unusual occurrence; they are not taken any notice of by the workers until after they are fertilised; but such an event as yours is very rare. I have never had such an experience myself.—W. B. Webster.

[352.] *Escape of Bees.* (Young Bee-keeper.)—I understand this query that his section-rack does not fit exactly over all the frames; if so, it is what generally is the case in all apiaries, and is usually overcome by cramming pieces of quilting, &c., into the spaces. If the bees get out into roof they usually soon find their way back again; the only thing is to see that outside bees cannot get in, or robbing will soon occur to some tune.—G. H. G.

[352.] (Young Bee-keeper.)—Do not super a hive with only six frames. Increase them gradually to ten, then super.—W. B. Webster.

[353.] *Sections containing Brood.* (J. C. T.)—The bees would go up in the sections at once, as their affection for the brood seems as great as the affection of a mother to her child; I don't mean the genus *homo*. The mother-bee is more inclined also to visit the sections. All the sections that have had the brood in them will be discoloured. Cut the brood out, especially if it is drone, and let the bees finish them; if you have many, you can transfer them into a frame and place in hive.—W. B. Webster.

[353.] *Sections containing Brood.* (J. C. T.)—The bees would all the sooner commence work in the supers. I do not think queen would be any more likely to go up, and the brood when matured would hatch out. The combs of these sections would not be quite so eyeable, being slightly darker, owing to their having had brood hatched in them.—G. H. G.

[354.] *Finding Queens.* (C. E. Cuthell.)—The querist, I presume, refers to ordinary manipulations with a frame-hive, and not to open driving from a skep. If so, I agree with him, and, as a rule, find the queen near eggs recently laid, or by empty cells from which the young bees have but recently emerged.—G. H. G.

[354.] *Finding Queen.* (Chas. E. Cuthell.)—Most certainly; bee-keepers, as a rule, are too fond of fairly choking the bee, and ply the bellows with as much vigour as they would to a forge. If too much smoke is used, the mother rushes about 'all over the shop.'—W. B. Webster.

[355.] *Early Destruction of Drones.* (Humble Bee.)—I have noticed a little of this; it is owing to the demand of food being greater than supply, and the workers consequently turn out the drones first. It is all through the recent prolonged rains, when the bees could do nothing day after day.—G. H. G.

[355.] *Early Destruction of Drones.* (Humble Bee.)—A very frequent occurrence in early spring. Honey is very slowly coming in, on account of the bad weather, which the bees are quite cognisant of; they can hardly get enough to rear the brood, and do not want a lot of lazy drones to eat it, and so drive them out.—W. B. Webster.

Queries.

[362.] *Doubling.*—Can any of your readers give me the full dimensions for making a good hive for 'doubling,' also for extracted honey?—Novice.

[363.] What makes workers telescope their abdomens in and out when alighting and resting after a flight?—Rare Sips.

[364.] *Supers and Sections.*—I propose working one of my stocks with a Woodbury 'super,' which I have fitted with frames instead of bars. There are eight of them, $12 \times 5\frac{3}{4}$ in. If the season should be a good one could I get some sections as well, placing a crate between the hive and supers? or is it best to keep to extracted honey and give more space as needed by slinging the combs in the super?—Rare Sips.

[365.] *Sections and Extracting.*—Or could I with advantage work a stock in a long hive with one crate of sections on the top, and besides extract from two or three back frames? The fact is I want only a small amount of extracted honey.—Rare Sips.

Echoes from the Hives.

Holme, near Peterborough, May 19.—Bees three weeks behind. Fruit blossom lost, still a few days' sunshine will set us upon our feet again.—John H. Howard.

Sompting, near Worthing, May 21*st.*—When shall we see a cloudless sky? The weather here is something horrid, and we have experienced such a winter that has made the best of us tremble. I hear little else here but 'Bees all or most of them dead,' 'Hives for sale,' 'Going to give up bee-keeping,' 'Want to buy a lot cheap?'—A. P. Burry.

Gresham House, Corbridge, May 22.—We have had three weeks of nearly constant rain, but as this is a fine day and the glass is going up, I hope the fine weather is coming.—R. L. Richardson.

Honey Cott, Weston, Leamington, May 22*nd.*—At the beginning of this month things looked very promising, but about the 10th a change came o'er the spirit of our dream about swarms and honey, for it rained four or five days with scarcely any intermission, being at the same time very cold, which necessitated continuous feeding to keep bees in good heat. There have not been more than two fine days since, but the rain has brought the beans and clover along finely, so that if we get nice weather by-and-by there will be a good chance for some honey.—John Walton.

Somerton, May 24*th.*—W. Snow, New Street, had another first swarm from straw skep on Sunday, the 23rd, the one reported for the 9th should have been from 'straw skep,' *not bar-frame hive.* Weather has been fine, but is now wet and cold again. Swarms are scarce as yet.—J. J. S.

North Leicestershire.—Fourteen consecutive rainy days, yielding 1·48 in. of rain, have not been favourable for bees, and some stocks have shown the straits they are in by evicting both young drones and immature brood. To-day (May 24th) is warm, cloudy, and hazy, and the bees are apparently endeavouring to make up for lost time, for the sycamores and apple-trees are alive with them. No swarms in this neighbourhood at present.—E. B.

South Derbyshire, May 24*th.*—The last month has shown us all kinds of weather. May opened with a magnificent week for the bees, but on the 10th, 11th, and 12th, rain simply poured down incessantly. A tremendous flood in the Derwent Valley was the result, and my apiary was under water for thirty-six hours. My hives were all raised nearly four feet from the ground in readiness, and at

its highest point, the water just missed them by ¾ of an inch. Very luckily for me a very strong, cold, north wind blew whilst the water was up, or my prospects for this year would have been utterly ruined. I only lost about 1 per cent of bees through drowning. The hive I spoke of in a former 'Echo' as having 'come to grief' is pulling round nicely. About thirty or forty bees and the queen survived till the middle of April, having a patch of brood as big as half-a-crown. I gave them a frame of hatching brood and young bees from another hive, and now they are coming on remarkably well. The bees are working well to-day; it is cloudy but calm and very warm, over 60 degrees.—M. J. Astle.

Caerleon, Mon., May 25th.—We are having a bad time of it just now down in South Monmouthshire, nothing but rain since the 12th inst. The fruit-blossom has come and gone, but my bees have not been able to gather owing to the wet. We must now wait for the clover, which mostly blooms down here the first or second week in June.—Isca Silurium.

NOTICES TO CORRESPONDENTS & INQUIRERS.

A. T. Wilmot.—*Supposed Diseased Brood.*—1. Chilled brood is not likely to become diseased, but since the date of your last letter it may have become decayed. 2. If disease does exist, it would not, of course, show itself in winter when there was no brood. The dead bees had most likely died naturally when too cold for the others to turn them out. 3. *Hilbert's Fumigation Process.* This is fully described in Cowan's *Guide-book*, p. 138.

John MacV.—*Burrowing Bees.*—The bees reached us safely, but the cells were pulverised out of all shape and form. The bees are burrowing bees of the family Andrenidæ. These are solitary, not social, bees; they show great industry and ingenuity in the construction of their nests, and in the provision that they make for their young. They are very frequently to be seen at this time of the year collecting food and carrying to their nests pollen for their brood. See reference to them on page 216; and on consulting indices of previous volumes you will be able to ascertain many particulars of their natural history.

R. L. Richardson.—1. Great care should be taken in inserting foundation that it should hang perpendicularly, we are inclined to say that the bees have worked irregularly from this cause. Wired foundation is a preventive of this occurrence. 2. If you desire to supersede the present queen the bees would rear another. This should not be postponed too late; the beginning of the second week of July would be a suitable time. This would be preferable to permitting the bees to do so, as they might be disposed to continue her presence for a length of time. 3. No. 1 sample of enamelled cloth would answer your purpose.

Walter C. A.—*Skeps.*—If your neighbourhood furnish rushes, skeps might be made of them, bound with brambles; but it is desirable that they should be made of stronger materials than are generally employed by cottagers. The best skeps are made of rye-straw, bound with cane. The size of skeps depends on the honey-yielding qualities of the district. A suitable size would be 15 in. in diameter and 7 to 9 in. deep, or 16½ in. in diameter and 10 in. deep; this latter would hold 50 lbs. of honey. The hole in the crown should be 3 or 4 in. in diameter.

L. Wren.—*Honey.*—The honey forwarded is pure, but of rather inferior quality.

H. M. F.—*Wax-moth.*—The 'caterpillars' forwarded were the larvæ of the wax-moth, their existence in hives is detrimental to bees.

W. W. D.—*Placing Sections.*—Feeding must be discontinued before you place the sections on frames. The time for putting sections on is when the hive is full of bees and brood, and honey coming in plentifully from the fields.

A Working Bee.—*Sparrows and Swallows.*—There is no doubt that sparrows are very destructive to bees, more especially when they are rearing their callow brood. Swallows are not so partial to bees, they prefer smaller insects; they are, however, not altogether innocent of apicide, having occasionally been discovered in the act. (See Vol. 13, p. 325.)

Extractor.—*Unfertilised Queens.*—From the absence of worker and the abundance of drone-brood, there is no doubt that your queen was of last year, and unfecundated; she therefore became a drone-breeder. The patch of drone-brood, found afterwards in the brood-frame, which you inserted, was raised from this queen's eggs, and is proof positive of her not having mated. Probably you pinched the queen in catching her; or she might have been chilled. It is always best to place a few workers with the queen in the box, and to keep them warm.

J. M. B.—*Drone Brood cast out.*—The cold weather caused the bees to condense, the drone brood, being at the edges of the combs, became chilled, and was therefore cast out.

Rare Sips.—F. Cheshire's work is published by L. U. Gill, 170 Strand.

R. Y.—The comb bears symptoms of incipient foul-brood.

A. P. B.—Worker bees do not store any thing in their cells but honey.

Novice.—It is very desirable that bee-keepers should be brought into a mutual knowledge of each other. We conceive there is no better mode of attaining this object than by joining the district Association in your neighbourhood. By frequent meetings in which an interchange of thought would take place, a sympathy of feelings, a fraternity of spirit, and a co-operation of energy, would be evoked.

Another Novice.—Among bee-keepers there is no recognised standard size for hives, neither is there any uniform mode of making the ends of frames or of measuring the distances between them. The British B. K. A. have adopted a standard frame, and the hive can be made—according to the will of the hive-maker or the honey-producing qualities of the district—to take any number of frames, but ten or eleven are generally used. There is a great diversity of opinion among bee-keepers respecting distance-keepers; broad-shoulders, distance-pins, metal-ends have all their supporters; whilst some contend that frames can be manipulated with greater ease and rapidity by not having any distance-guides at all. We do not think that bee-keepers will ever arrive at an unanimity on these minor points. The distance from centre to centre of comb is 1½ inches, or, to be more exact, $1\frac{9}{16}$.

Bee Stings.—There is a remedy for bee-stings given by a physician which to me is new. He states that the wax of the ear is secreted to prevent insects from entering, and destroy them if they attempt such a lark. The wax is a remedy for all such poison, and we carry with us nature's own antidote for poison from the bee. Let it be applied at once to the wound, and none more effectual can be obtained, and the substance is always applicable and effectual for the system of the individual by which it is secreted. It costs nothing to try it.—R. F. Holtermann (*Canadian B. J.*)

Stings and Remedies.—Mr. G. Walker asks if any one has known Dr. Pine's lotion to fail? Well, I tried it two years ago, and although I applied the lotion liberally directly after being stung, I swelled frightfully; in fact, as bad as when I used nothing. I have tried ammonia until my face blistered with the like result. But I think the worst is over, as the last two stings did not trouble me, and I tried no remedy. The poison used to affect me thus:—Painful for a few minutes; then feel no more of it for about twenty-four hours; then it would commence to irritate and swell for twenty-four hours; then gradually go down.—C. Barnett, *Godalming.*

Hive with a Bad Smell.—'Inquirer' asks the cause of his hives having a bad smell when there are no visible symptoms of foul brood. I have observed during the last four years that hives which contain a large quantity of unsealed brood in the spring have a peculiarly raw smell, like that of uncooked meat. Later on, plenty of new honey coming into the hive covers this smell. On beginning bee-keeping this raw, and really disagreeable smell, quite alarmed me. Now I know it to be a sign of a prosperous colony.—Beeswing.

Enquirer.—Stock Ligurianised August 31, 1885. Black bees last seen May 8th, 1886.—Nucleus.

Manipulating Bee-house.—Will Doctor Craigs be good enough to say where a rejected army bell-tent can be got?—Beeswing.

Mr. A. Green, of Selston, Alfreton, writes:—'I have invented a top bar for frames, which I think will prove useful to bee-keepers. It is interchangeable with metal ends, and is made entirely of wood. I feel it necessary to protect the right of manufacture.'

Mr. Richard M'Nally writes:—'In your issue of 20th inst., under the heading "Scotch Honey Competitors" [335], a false charge is brought against me, as one of John M'Nally's Brothers "*having bought honey in the open market*" and showed it as my own production. Without entering in any way in the debate, I give it an emphatic denial. As a member of Committee of Caledonians, I would not allow such a thing to pass without informing the other members of Committee; and it remains with "J. H." to prove such an assertion.'

[We readily insert the above, but we do not find any reference to Mr. R. M'Nally in the letter of 'J. H.'—Ed.]

Received from Mr. L. Wren, of Lowestoft, a very simple and cheap block for inserting foundation into the saw-cut of a frame. Two headless nails—2⅞ inches from each other—are inserted in a block by which the opening is increased so that the foundation is easily slipped in. There is at one end of the block a revolving piece of wood which secures the bar, and allows both hands to be used in slipping the foundation into the now gaping saw-cuts.—Also, a reversible frame, in which the ends can be cut off from the ordinary frames, and then fixed to the metal ends. These ends too easily drop off the frames, and if they fell among the bees would create an undesirable commotion. What is required in reversible frames is that the ends should be firmly fixed to the frames, and at the same time easily and quickly detached.

Show Announcements.

June 29–July 5.—Hives, Honey, &c., Royal Horticultural Show at Liverpool. Entries close June 10th. Secretary, J. Huckle, Kings Langley.

July 12–16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Post Entries to June 1st. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 30–August 5.—Great National Show at South Konsington. Secretary, J. Huckle, Kings Langley.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

June 24, 25, 26, 28.—Royal Counties Agricultural Show, Portsmouth.

July 14.—Swanmore.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

Business Directory.

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MEADOWS, W. P., Syston, Leicester.
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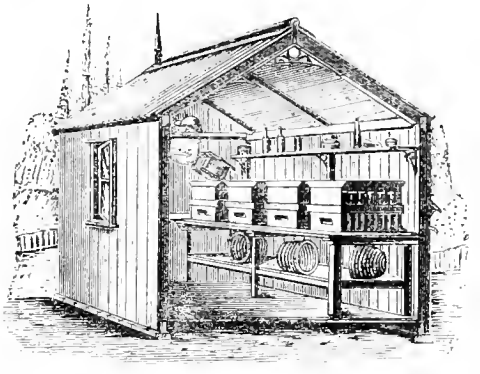

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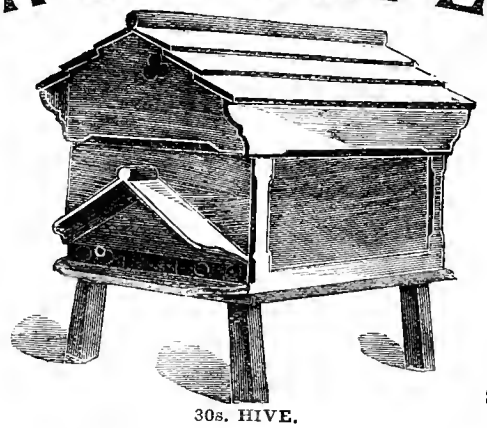

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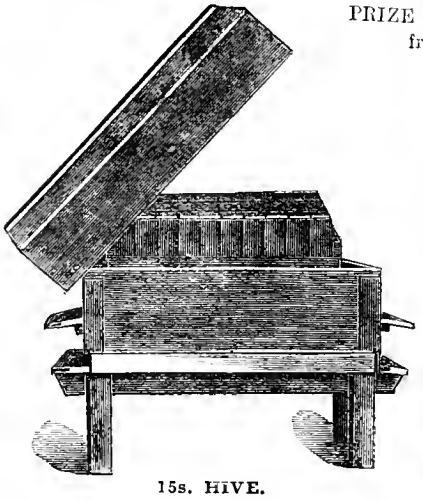

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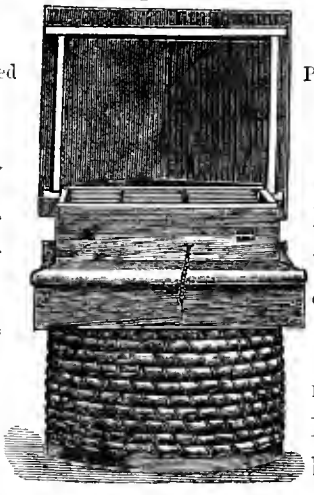

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Anyone wishing to compete, must order their Hives before May 31st, and send in their report before Sept. 30th, 1886.

The winning numbers will be published in the *B. B. Journal.*

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THE BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

FROM CREATION TO 384 B.C.

My purpose is to give a brief account of the early history of bees; to show the knowledge which was possessed by man in the primitive ages, when wonderful inventions and long study had not drawn aside the veil which so effectually concealed for hundreds of years some of the greater mysteries of the hive; to give to those who think but little on the subject some inkling of what was known before the production of honey became a widely recognised industry; to ask them to consider which is the most wonderful exploit, the knowledge of Aristotle—culled from the ancestors of the modern bee-keeper, without those aids to research so commonly now possessed, with but few early writings to which he could refer; without treating the subject as one sufficient to engage his whole attention—or the knowledge of a modern bee-keeper, gained by the direct aid of books of his own day and of the earlier ages, and assisted by all the mechanism and inventions which can assist the curious eyes of an industrious, painstaking searcher after knowledge?

At present it is impossible to think of attempting more than giving a brief survey of the period from the creation of the world to the time of Aristotle, which may be roughly stated to embrace all time until 384 B.C.; and before going further it may well be stated that such facts as are here given are entirely derived from the *Natural History of Animals*. It is, of course, recognised that some few sentences are still extant of a far earlier date, in which mention of these busy insects is made, but none of them are of great importance; and we may also remember that although the works of earlier years have not come down to us, the great author of the *Natural History* had in all probability access to them, and incorporated in his own work such parts as he thought were either, by reason of their still being facts which had not then been dispersed, or being of general interest from an historical point of view, worthy of his notice. An instance is probably now before us when we read that some thought the young of bees were gathered from the flowers; others that the rulers of the hive produced them.

Of bees then, wrote Aristotle, there were four kinds:—1. Two sorts of kings; 2. Two sorts of workers; 3. Thief bees; 4. Drones. The better sort of ruler was of a red colour; the inferior, black and variegated, of a size double that of a good bee. The workers also were of two kinds and the best of these was 'small, round and variegated,' the other long like the wild-bee. The thief bees were black and had a broad abdomen. The drones, the largest of all, had no sting and were stupid. At the time of which we write it had been noticed that the progeny of the ruler was different to that of the subject bee. The progeny of the king was red, and of the consistency of thick honey, and was in bulk as large as the perfect insect. Moreover, the cells for these rulers were placed at the bottom of the comb. The king was known to possess a sting which, however, he seldom used, and it is added that in every hive there were several rulers. Even the minutest particulars seem not to have escaped the eager eye of the earliest pioneer of bee-keeping—of whose work we have written record—for he tells us that to the king belonged a peculiar scent, sufficient to attract his subjects from a distance; and also that the rulers never left the hive even for food or any purpose other than swarming. Then comes what to me seems a great proof of accurate observation, for he writes, that if the kings died—and in every hive there were several—it was a fatal misfortune to the rest, being indeed the sure precursor of ruin; for after such death the drones, instead of being produced in one part of the comb only, were reared promiscuously in all parts of the hive—accurate observations in so far, that although not being aware of the ability of the bees themselves to raise another ruler, the presence of an abnormal king or a fertile worker has been detected. The king, being the chief of the hive, has engrossed so much space that it will be impossible to say more upon the subject, although it is one of great interest; but what is there in all the subject not of an interest equally great to an intelligent man? Of the two sorts of workers it may be said they did all comb construction, food collecting, and other necessary work of the hive, and to them there will be occasion to refer again. Thief bees were black, and most injurious to all the rest; and of our friend the drone, Aristotle had perceived that he did no work and had no sting, and says that by some he was supposed to be the male; he was also stupid, and was destroyed at the close of the season. Some thought

the ruler was indeed a perfect female; the drone a perfect male. The average life of a bee was six years.

The chief work of the hive, after rearing young, was to collect wax, honey, bee-bread, and mitys; and of these four, which correspond to what we consider the four principal substances used by the bee, a very erroneous and imperfect idea evidently prevailed. Wax was, we are told, collected from the flowers; and a most curious instance of close observation is given, for it is written that the bees collected wax by climbing on the flowers with their fore-feet. These they then cleansed upon the middle pair of legs; these again were cleansed on the curved part of the hind legs, and after this third movement the load was safely stowed away. In these wax-collecting journeys the bees were not capricious, for if they first paid their court to the violet, to the violet they remained faithful, and did not flit from one species of plant to another as their mere whims might influence them. From this wax the combs were made and on these the cells, which were constructed with two mouths; two cells on each base, the one on the inside, the other on the outside, and those cells which contained most wax contained most honey.

In comb construction the bees observed an order, for first they built cells for their own kind; next cells for the rulers, which were of a smaller size than the first; and, lastly, cells for the drones, and these were smaller still. How did, it may well be asked, these curious ideas gain credence?—The bigger the bee the smaller the cell!

Honey was not a secretion of the flowers at all—at anyrate, not in the way which we believe that it is—for at certain times of the year the most lovely flowers gave no honey, and this was accounted for by the fact that honey fell from the skies, and the chief fall was at the time of the rising of the stars, and when the rainbow touched the earth. And from this it was concluded, it may be supposed, that cup-shaped flowers yielded most honey, for, as it fell in drops from the skies, it was the more easily retained until collected by the bees.

Bee-bread was a substance carried on the legs, like wax, of an inferior quality to the other food, and sweet, like figs. Mitys was the perfection of wax.

In this account of the productions of the hive, little remains now of which it can be said that it is borne out by facts. The whole is proved by modern research to be of a fanciful nature, and, for the most part, essentially a false description.

Each bee had its appointed task, for in every hive there were the honey-gatherers and the wax-collectors, the bringers of bee-bread and the carriers of water; and it was also remarked by even this early writer, that of all insects the bee was the most cleanly, for it never settled upon flesh nor yet did it like anything seasoned. In all journeys, when the wind was high, a stone was carried by the bees to preserve their balance. The bee began, he says, to work when it had attained the age of three days; of its earlier existence, whether sprung from an egg which hatched and from which issued a worm, it seems difficult to tell from the history; but this is clear that the progeny of the worker-bee was a little white worm, which was placed at the side of the cells and rose to be fed; that after a certain time the cell was covered up, and the worm got wings and feet, while a worm it evacuated an excrement, but not afterwards. The wings were four in number and membranaceous, and by beating these and causing a friction of the air within the 'Buzz' was made.

(To be continued.)

GLEANINGS.

In the *Bulletin d'Apiculture de la Suisse Romande*, M. G. de Layens compares the swarming with the non-swarming methods of bee-keeping. Those compared are the natural swarming, the artificial swarming, and the total prevention of swarming methods. In his district the season has not been a good one, and those of his neighbours' hives which gave natural swarms did not collect sufficient honey for their winter's provision, and only those which did not swarm gave some surplus honey. In swarming artificially, the swarm can be made some time before natural swarms appear, and by placing the swarm on the stand of the parent stock, and removing this to the stand of another strong stock (as described by us in the Vignole system), time is saved, and the swarm is sufficiently recovered by the time of the great honey-flow to take advantage of it. In this way the hives would give an average of 5 kilog. (almost 10 lbs.) M. de Layens has worked his apiary for eight years on the non-swarming plan, which, with his large hives, he is able to do easily, and only makes artificial swarms when he requires them; and by this method he obtained an average of 14 kilogs. (almost 29 lbs.). From these results he comes to the conclusion that in bad or indifferent seasons natural swarming gives a very bad return, artificial swarming allows the bee-keeper to get a better result, and that the non-swarming system yields results far superior to the others. Therefore, as indifferent and bad seasons are more frequent than good ones, the bee-keeper, by adopting the non-swarming system, has a better chance of getting honey than by any other method. During the eight years that M. de Layens has practised this system, he has seen more bad years than good ones, and has always not only got enough honey to pay for the trouble and expenses attending the keeping of bees, but has also derived a good profit from them. Whilst in 1879 his bees were storing up sufficient provisions for winter, hives in the neighbourhood were perishing by hundreds, not only for lack of honey, but principally from the excessive natural swarming.

In *Gleanings*, we find A. C. Hamilton, writing from Oxford, England, says: 'There has been an immense increase in the production of honey in England during the last two years, and a vast improvement in the methods used. The result is that there is now a very large supply of first-class clover-honey raised in England. It can be got wholesale at 5*d.* and 6*d.* per lb. here, just half what it was two years ago. This is cheaper than first-class American honey, with cost of transport added. The stores with which I am connected find that at present they can get first-class honey cheaper from English producers; and while this continues we shall not require honey from America. It is said that there is a vast importation of first-class California honey. I cannot see how it can pay a man who can get 5 cents or 6 cents a lb. for honey in America, to transport it to England, where it will fetch about the same price. But I have since been told that high-class California honey is sold in Liverpool and London at 35*s.* per cwt, or 3¾*d.* per lb., or 7½ cents per lb. I got a specimen, but it was *not* first-class clover-

honey. But although not first-class, I am surprised that it should pay any one to import and sell it at that price.

In the *Bee-keepers' Guide*, the Rev. M. Mahin, D.D., suggests the probable use of fertile workers, which he says are most frequently found in those races of bees which are natives of countries where the summers are long and dry. In such countries there are long periods of hot weather, in which there are no flowers, or so few as not to afford bees a living. At such a time drones are killed, that there may be no non-productive consumers in the hive. The rearing of brood almost entirely ceases. Suppose by accident a queen is lost. There are a few eggs in the hive from which a queen may be raised, but not a drone within a hundred miles, it may be, for her fecundation. If, about the time queen-cells are built, drone-eggs are laid by some of the workers, they may produce drones in time to mate with the queen, and thus avert the destruction of the colony, for when there is little or no honey gathered, and there is little activity among the bees, queens mature slowly, and may be fertilised when several weeks old, as Dr. Mahin has more than once had the opportunity to observe.

L'Apiculteur announces that its editor, M. H. Hamet, is preparing a book, entitled, *Dictionnaire d'Apiculture ou Glossaire Apicole*, which is to appear about the middle of the year.

In *Gleanings*, James B. Mason says, in handling Carniolans, that they remain quiet on the combs, although they can be shaken off as easily as any other bees. Although when you are handling them they take no notice of robbers flying about, they will not allow a robber to get in at the entrance, and are in this respect equal to Cyprians. Another peculiarity is that they gather no propolis, but fill up all cracks with wax.

In the *American Bee Journal*, Professor Cook says he finds, by actual observation, that single flowers are sometimes visited by bees fifty times a-day, and he has seen bees visit over twenty flowers a minute.

PROPERTIES AND CHARACTER OF HONEY AND TABLE HONEY.

(*Continued from p.* 236.)

If pure honey found a readier sale here bee-keeping would be carried on without doubt more extensively. Nature supplies us with ample honeyed treasures. We are firmly convinced that it is not wise economy to import from abroad at a great monetary sacrifice an article which nature supplies us with gratuitously. We even here put aside all the other advantages to be derived from bee-keeping (for instance, the most important work the bees perform in the fertilisation of flowers, and consequently in the production of fruit, &c.) The pecuniary loss inflicted on our country by the importation of honey and wax is greatly increased when our own producers have to compete for an article which is required by us with imported goods (treacle and glucose), by means of which an article is manufactured and sold which not only destroys all the profits of the bee-keeper, but also sends the money out of the country. 'Already,' say some of our principal bee-keepers, 'we feel the falling off in the demand abroad for pure honey, owing to the bad reputation acquired by table-honey in Leipzig and Berlin.' Have not our bee-keepers the right of the protection of the law as well as other producers? They certainly have.

The ease with which this honey can be made is seen from the number of recipes offered to anyone wishing to purchase them. For instance, one advertisement states: 'Any person wishing to learn to manufacture honey (an industry which yields a profit of fifty per cent wholesale and 100 per cent retail) can send his address to E—, chemist, H— Street, Zürich. Fee thirty francs. Time required for learning half day.' Then for twenty to thirty francs one gets the following printed instructions: Recipe for table-honey: Take .... kilog. crystal-syrup and .... kilog. of pure foreign honey, mix well and the table honey is ready, &c., &c. Crystal-syrup (glucose) made from potato starch by means of sulphuric acid, is, according to medical opinion, absolutely detrimental to health, more particularly if badly made and taken frequently. This accounts for the remark one often hears that 'honey does not agree with me.' Bees will not even touch glucose unless it is largely mixed with honey. The police have therefore weighty sanitary reasons for waging war against the manufacture of table-honey. Therefore we again repeat, there exists the absolute necessity to remove from the manufactured article the least appearance of its relation to honey, and therefore cry, 'Down with the words *table-honey* and *artificial honey*, and allow it no other name but that of *syrup!*'

Granulated honey can be easily rendered liquid without its losing its aroma or impairing its quality. The jar has simply to be placed in a tin vessel of water kept at a temperature of 40° Réaumur until the honey becomes liquid.

We have said all this for the purpose of properly determining the terms *honey* and *syrup*. And now bee-keepers, authorities, and all the public in Switzerland, unite and shout with one accord, '*Down with table-honey!*'—The President of the Swiss Bee-keepers' Association in *Schweitzerische Bienenzeitung*.

Selected Query.

[366.]—*What is the best system on which to work an apiary, say, of twelve hives, for the production of comb-honey only, without increasing the number of hives, either by natural or artificial swarming?*

I should work the apiary on the storifying system, and if a swarm issued return same, giving two extra frames and an extra crate of sections, thus satisfying their natural instinct for comb-building after swarming, and also store-room for honey in the sections.—W. Woodley.

Having the hives fully prepared for the honey-glut when it comes, I would put on crates of supers, and when nearly finished lift these up and put empty ones below next brood-nest. Give the supers in good time, and plenty of them, and keep entrance at full width. If hive can be lifted up from bottom board one-eighth of an inch, it would greatly help to keep the temperature down in hive; thus in a good measure swarming can be prevented. Should a swarm issue, I would return it back *minus* the queen, watching on the tenth day afterwards; and do same again should another come off.—R. McNally.

No certain method of preventing swarming altogether has yet been discovered when working for comb-honey, although most apiarists have turned their attention to the subject. The chief points of prevention are (1), allowing plenty of room in the brood compartment, particularly on the front side of the hive, keeping several combs unfinished where frames are ranged parallel to the entrance, (2), keeping the bees well at work in supers on the 'tiering-up' system; (3), ventilation between floor-board and hive; and shading hives. In the case put above, I should endeavour to carry out these points. If a swarm were cast from any hive, I would place it in a new hive upon the old stand, upon frames of foundation, and the surplus cases upon it. Above these I would place the old hive—brood-combs and all—having first removed its floor-board, and cut out all queen-cells. When the brood was all hatched in the old hive, I would shake out all the bees in front of the new hive, and, removing the former, would give another case of sections below the other surplus cases. If thought necessary, a sheet of excluder-zinc might be placed between the old hive and surplus cases.—George Raynor.

Stimulate the twelve stocks by feeding, spreading the brood &c., as described by me in my reply to Query 22, p. 16, of this volume, so as to get all as strong as possible by the first honey glut. To obtain the largest harvest of comb-honey, I would

then select from the twelve stocks the eight strongest (*instead of equalising the whole by robbing the strongest to build up the weakest, as is generally advised*), and still further increase their strength by exchanging the frames having the least brood with frames taken from the four remaining stocks having the largest amount of sealed and hatching brood, and leaving each of the eight selected stocks eight or nine frames filled with ripe brood. For obtaining comb-honey not more than nine standard frames should be used, and with a judicious tiering up of racks of sections, furnished with foundation, well in advance of the requirements of the bees, so that they are not overcrowded, swarming will in most cases be prevented. In 'tiering' up or 'storifying' sections, always put the additional rack immediately above the brood and under the racks already on. On p. 16 above referred to I have described more fully the mode of tiering up I recommend. In a short time the strongest of the four stocks not supered can be built up and treated exactly as the other eight have been. Much more comb-honey can be obtained by this system than any other that I am acquainted with.—JOHN M. HOOKER.

It would simplify matters considerably to be able to refer to the Cowan, Simmins, or other system; we should then know the hives and exact method of management recommended by the gentlemen whose names the systems bore. As far as I am aware there is only one detailed system named as above for the prevention of swarming, while producing comb-honey and that is the system recently made public by Mr. Simmins. A reply to be really useful to those who look to this column for guidance would take up more space than you are able to allow. I would therefore refer such to the replies by Mr. Hooker and myself on p. 16 in present volume, and only add that super room should be given slightly in advance of the requirements by tiering.—C. N. WHITE.

SOUTH KENSINGTON EXHIBITION.

The following donations have been added since our last issue :—

Wilts Association	£1	1	0
G. D. Haviland	0	10	0
Previously acknowledged	144	15	0
	£146	6	0

It is to be hoped that persons who are willing to contribute to this fund will send in their names as early as possible to the Secretary. Not less than 200*l.* should be guaranteed. Prize Lists are now ready.

ASSOCIATIONS.

SOMERSETSHIRE BEE-KEEPERS' ASSOCIATION.

This Association held its first Exhibition for the season on May the 11th and two following days at Wells in connexion with the Somerset Agricultural Society's Show. The show-yard was prettily situated in the Bishop's park, and the route to it lay through a quaint old gateway and along a very fine avenue of trees, which were looking their best with the fresh, spring foliage. The bee-tent was well situated a short distance from the entrance. The bee appliances were staged in a shed close by. The various classes were well represented, and some good hives shown by Mr. S. J. Baldwin, Bromley, Kent; Mr. T. F. Fluise, Barnstaple, Devon; Mr. C. E. Pyne, Yeovil, Somerset; Mr. A. F. Hutchings, St. Mary Cray, Kent; Mr. Perry, of Banbury; Mr. Hole, of Tarrington.

Through some unfortunate delay in the railway the hives of Mr. A. F. Hutchings did not arrive on the ground in time for competition, but we were particularly struck with their make, and they would probably have stood well in their respective classes.

We noticed that the first prize for crate of sections was awarded to one of the Benthall type, which is certainly the easiest kind to work. The arrangements of the Show were ably carried out by the indefatigable hon. sec. the Rev. Charles G. Anderson. The weather the first day was all that could be desired, and the bee-tent was fairly well patronised. The manipulations were entirely conducted by Mr. Anderson, who also delivered short lectures, in which he was assisted by Mr. Wm. N. Griffin. On the second day constant heavy showers rather checked the proceedings, but Mr. Anderson, ever at his post, was not to be daunted, and in spite of the elements succeeded in having several bee drivings. Very great interest was shown, and we hope that the Wells meeting may bring many new members to the ranks of the Bee Association. The judges were Wm. N. Griffin, Esq., Freshford, and F. Clark, Esq., and appended is the list of awards :—

1.—The best and cheapest hive on the moveable-comb system, with arrangements for summer use	Equal 1st { S. J. Baldwin. T. F. Fluise. 3rd, C. E. Pyne.
2.—The best and cheapest hive on the moveable-comb system with arrangements for summer use	1st, S. J. Baldwin. 2nd, C. E. Pyne. 3rd, E. J. Butt.
3.—The best skep-cover containing crate of sections	1st, S. J. Baldwin. 2nd, T. F. Fluise.
4.—The best crate of sections.....	1st, S. J. Baldwin. 2nd, A. F. Hutchings.
5.—The best sample of thick foundation, manufactured in the United Kingdom, from pure bees' wax, not less than 2½ lbs. for worker cells, with price per lb. attached	1st, S. J. Baldwin. 2nd, E. J. Butt.
6.—The best sample of thin foundation, same condition as above	1st, S. J. Baldwin. 2nd, E. J. Butt.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

At a Meeting of the Committee of the above Association, held at Leicester, on Saturday May 29th, the following resolution was put and carried unanimously :—

'That the Association decline to show at the Colonial and Indian Exhibition at Kensington, owing to the date clashing with that of the Leicestershire Show, and to the low state of the funds of the Association.'—E. B.

IRISH BEE-KEEPERS' ASSOCIATION.

A committee meeting was held at 36 Westmoreland Street, Tuesday, May 18th, Dr. O'Farrell in the chair. Present: Dr. Knight, Dr. Allen, the Rev. P. Cavanagh, Messrs. Edmondson, Read, Vanston, Sproule, Gillies, and Walter J. Stanford, Ounavarra, Lucan, Hon. Sec. Considerable formal business was transacted. A letter was read from the Society for Prevention of Cruelty to Animals regretting that they would be unable for the future to lend their rooms to the Association for committee and other meetings. It was decided, after some discussion, not to hold an independent show this year. A sub-committee was appointed to try and make arrangements to have Irish bee-beeping represented at the coming Grand National Apiarian Exhibition, and to report to the general committee.

A WASP AND BEE FIGHT.—A Worcester Correspondent writes to a contemporary: 'Noticing a cluster of bees at the entrance of one of my hives, I examined it for the cause, when I found a large green wasp (*Vespa Germanica*) and bee united in a death-struggle. The wasp had attempted to enter the hive, when the bee attacked it and stung it in the mouth, from which it was unable to withdraw its barbed sting; and the wasp in return had gnawed away the lower part of the abdomen of the bee, when both were killed in this position.'

Foreign.

FRANCE.

Weather and other circumstances have, within the past few weeks, favoured the wholesale honey trade. Considerable lots of '*whites*' have found purchasers in barrels, and '*extras fine*' in half barrels as well as in pots. A good stock, however, of '*whites*' in pots remains unsold. This is probably owing to the inferior foreign honeys, notably Hungarians and Americans, which have of late been offered to grocers at from 70 to 80 francs per 100 kilos, and which are being unscrupulously retailed by them at 1.40 francs and 1.60 francs per kilo, or, say, 50 per cent profit. It is a pity that our retail trade does not encourage the consumption of our own French honeys, which are now offered at from 85 to 90 francs per 100 kilos, and would leave a considerable margin of profit, although not quite so great as is derived from the imported ones. This probably explains why our English brothers, finding their market glutted with inferior foreign honeys, have united themselves in the form of a league for the direct sale of their home-produced honey to the exclusion of the imported ones. The success obtained in London cannot fail to take root. Shall we be able to follow our neighbours' example?

Now, as regards the actual quantities on hand, it is probable that there will be less on June 1st next than there has been for considerable time past. Paris dealers have profited by the lessons they have learned of late, and no longer believe in overloading themselves with too heavy a stock; but as a natural consequence, the honey remains unsold in the provinces, where it cannot find a buyer at almost any price. Their presence cannot improve the chance of the new harvest, and if the latter is an average one, it is difficult to see how better prices than last year's are to be obtained. In fact, the prices at which bees for the provinces of the Gâtinais and the Beauce are bought show that producers of honey are basing their purchases upon this calculation. They, like all other producers, are becoming more and more prudent.

As the English market has closed its doors against inferior American honeys, these are now trying their luck farther north, or come to Havre, where a fair consignment of Chili was lately disposed of at 45 francs per 100 kilos, in bond. It is reported that another lot of over five hundred cases from California is soon to be offered at ridiculous prices. These will probably find a sale among makers of '*pain d'épice*,' because Brittany honeys command much higher figures. The manufacture of these '*pains d'épice*' is becoming quite a regular trade both in Paris itself and in its environs. The sale of this article is, it appears, daily increasing and extending itself all round.—*From the Apiculteur of Paris for April*, 1886.

ITALY.

According to the *Apicoltore*, of Milan, April has not been for Italian bee-keepers of a nature likely to raise their spirits. Generally speaking, it has been dull, cold, and inclined to rain, thus leaving but few favourable intervals for the bees to be out on profitable expeditions, and to provide the necessary food for their brood. As, however, April is not, from an apicultural point of view, the harvest month, the Editor advises his readers not to be discouraged, as a spell of fine, bright weather, of the Italian pattern, will enable bees to make up for time lost.

A new Bee Association has been started at Puos d'Alpago (Belluno), of which Signor Silvio Fontanive, of Sospirolo, is the moving spirit.

A month or two ago Signor Francesco Ghezzi, a certificated bee-keeper, residing at Albuzzano, advertised that he would be prepared to assume the management and responsibility, either of established apiaries as going concerns or to be started, guaranteeing to their proprietors, upon certain conditions, a fixed annual revenue therefrom, taking upon himself the risk of a loss, or the benefit of any excess profit. As a moral guarantee to those who would avail themselves of his overtures, Signor Ghezzi and his wife submitted themselves a few weeks ago to a severe test or examination, presided over by the President of the Association, Count Barbo, Vice-President, Prof. Barbieri, and Councillor Stefano Fumagalli, who expressed themselves fully satisfied with their theoretical and practical knowledge of bee-keeping. The result has been that Ghezzi's proposal has been accepted by so many bee-proprietors that he can accept no more offers. In commenting upon this new departure in the mode of speculating in bee-keeping, the *Apicoltore* expresses the hope that many others may soon follow Mr. and Mrs. Ghezzi's example, as the presence in the country districts of individuals willing to stand or fall by the success they are confident of achieving, will go a long way to help the hesitating to make up their mind to embark in bee-keeping in a business-like manner.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts* (see 2nd page of Advertisements)

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

REVERSIBLE FRAMES.

[967.] I do not know whether the reversible craze is having such a boom your side of the water as on this, but I do know that the theory on which it is based is wholly unscientific, and that the results claimed to follow its adoption can be far more easily and cheaply obtained, and with far less labour and trouble.

I have experimented to some extent in the matter, and my views are based on the results of those experiments. It is a conceded fact that bees will not seal up brood in cells more than regulation depth, namely, in those that are built in comb more than $\frac{7}{8}$ inch thick. It is also a conceded fact that they dislike to store honey in cells that are not deeper than those built in such comb; in fact, the more space given for depth of store cells the better they are liked and the more freely used. Keeping these points constantly in view, it is easy to work out a theory in regard to the matter, and if in practice that theory proves tenable, we may consider the matter fully proved. I have worked up such a theory, and four years' experiments have fully tested it to my own satisfaction. Premising that the main object of reversing is to rear brood in the brood-chamber and force surplus honey into sections, and, knowing the method even if practicable is clumsy and difficult, I assume that a method that is compatible with the natural habits of the bees, and that possesses the virtue of being cheap and easy, is far superior, particularly when it requires no change from the particular style of frame-hives in common use.

The method I have adopted and, as I think, fully tested is as follows:—In early spring, when I make my first examination, I extract the honey from the brood-chamber, shave all the combs to just $\frac{7}{8}$ inch thick, and then replace them just bee space apart, filling in with a dummy if needed. As soon as the honey season opens I place as many sections as is desirable on the frames,

and remove them as fast as they are filled. The result invariably is that brood only is reared in the brood-chamber, while honey is at once stored in the sections. The reason of this is obvious, and follows legitimately and naturally from the well-known habits of the bees, described in the beginning of this communication.

When the season is near its close I remove sections entirely, space the frames in the brood-chamber a little wider apart, and allow the bees to store up their winter supply.

The above plan can be used with any frame-hive in existence, and thus avoids any extra expense, and is preferable to reversing on this point alone; but when we take into consideration the further point that reversing is unscientific as well as expensive, we have the strongest possible argument in favour of the method I have explained, even if viewed merely as theoretical: when in practice it is found, as I have found it, to produce invariable results, then we have the strongest possible claims in its favour.

You can make such use of the above as you may choose, as I give it wholly in the interest of bee-keepers the world over, and desire to have the matter fully tested by every bee-keeper in the civilised world. Where there is so much assumption, I desire to do what little I can to enable the brotherhood to work in accordance with law, and at the least possible expense and trouble. A subscriber for years to your valuable *Journal*, I appreciate your labours, and trust you will succeed in the noble work you are striving to perform, namely, that of bettering the condition of bee-keepers in your country, particularly 'Hodge,' and thus bee-keepers the world over.—J. E. Pond, jun., *Foxboro', Norfolk Co., Mass., U.S.A., May* 17.

LECTURING IN NORTH WALES.

Roe Wen, North Wales.

[368.] Having been asked to conduct a lecturing tour through the mountainous districts of North Wales, I have availed myself of the opportunity of casting abroad the seeds for the growth of modern bee-cultivation in these far-away and wild regions. During last week I took the coast line, delivering lectures at Colwyn Bay, Rhyl, Llandulas, Abergele, Conway, and Llandudno. Next week we are going 'up into the mountains.' Such an expedition, I am told by the residents here, has never before been attempted. It will chiefly have to be done in carts, as baggage is rather too heavy to carry with you with any degree of comfort along such mountainous roads; it also necessitates an interpreter going with you, as it is quite the exception to hear anyone speak English; even the better-class farmers are backward in this respect. A Welsh-speaking gentleman has volunteered his services, and accompanies the expedition. I find very little bee-keeping going on in the parts I have visited. These districts at one time were very celebrated for the production of honey, a large honey fair being held every September in the town of Conway. Some of the inhabitants told me that very large quantities of honey and wax changed hands, but that during the last ten years it has gradually dropped off, so that now it is not worth the name of a market. I have succeeded in awakening the interests of a few, and they seem to have caught the bar-frame fever rather strongly. There is no doubt that, now it has been placed in the hands of such men as Mr. E. W. Davies, Hon. Sec., and Mr. Squires, great good will come of it, as these gentlemen evidently mean business, and do not intend to allow the old industry—bee-keeping—of North Wales to decline. I have come across about six bar-frame hives, with the exception of one gentleman at Conway, who has five; four of these were in excellent condition, but very much in want of extra space, the fifth being motherless. I provided them with means of obtaining another. Here they feel very little the effects of winter, camellias, veronicas, and such like delicate shrubs growing in the open. Great interest was evinced by many, but superstition is very rife, and stands very much in the way of the extension of the knowledge of modern apiculture. At one village, the lecture being given in the schoolroom, I had an audience of over 200; I stayed until midday next day, and was busily engaged most of this time answering questions to those who had attended the lecture the preceding evening.

Bees seem very backward, and it will require some two or three weeks of fine weather to bring them up to the proper standard.

I will give you an account of our mountain expedition next week.—W. B. Webster, *Wokingham, Berks.*

JAPANESE HONEY.

[369.] As already reported, a parcel of honey was included in a trial consignment of Japanese drugs which were sold in Mincing Lane two weeks ago. As far as we are aware, honey from Japan has not previously appeared in our markets, and for this reason it may be well to place on record its more prominent characteristics. It possesses a coffee-brown colour; the odour is similar to Californian honey, but is somewhat offensive; and the taste is slightly bitter, though otherwise honey-like. On standing it separates into two layers, the upper granular and of firm consistence, the lower syrupy and less viscous than simple syrup. On separation from the granular portion the syrup was found to have a specific gravity of 1·350. On treating the honey with water the greater portion of it dissolved, and there floated on the surface a large quantity of yellow pulverulent matter, which dyed the filtering paper, as well as remains of insects, pollen-grains, and other suspended impurities. On examination this pulverulent matter, which makes up, along with crystallised grape sugar, the bulk of the granular portion was found to consist of wax. This exists to an unusually large extent, and should make the substance an efficient basis for boot-blacking, which we understand from a correspondent is the purpose to which it is to be put. The product is never likely to be used in pharmacy, but as it is unique in some respects it would be of interest to trace its origin, and if possible to have information regarding the food of the bees and the source of the yellow colouring matter, which is the principal characteristic of the sample.—*The Chemist and Druggist.*

BEES AND BEANS, &c.

[370.] I have seen it stated in bee books that it is doubtful whether bees are able to extract honey from the flower of the bean, except when the base had been pierced by the humble-bee. Is this the case? I watched last evening the bees on a field of winter beans where they were very busy, and upon examination I found most of the tubes were pierced at the bottom, but I cannot think this could have been the work of the humble-bee alone, for the whole field of about ten acres was being worked by bees, and this after five o'clock. I enclose a few of the flowers I gathered. I have never seen my bees at work on the common broad bean which grows in gardens.

There was some discussion in the *B. B. J.* on the subject of red clover as pasturage. I never saw any quantity working on the first crop, but I remember in 1884, when pasturage was scarce, seeing the bees vigorously at work on a second crop in August.

I should like to mention that I had a swarm from a skep on the 18th May this year, nine days earlier than last, and eight days later than 1883. I should like to know what has been the experience of others.

I have been using American cloth over my bees, but I find they bite it, and especially round the feeding-stage. —Eastern Counties.

PLANTS FLOWERING IN JUNE.

[371.] The undermentioned bee flora will flower this month (June):—Birdsfoot-trefoil, bugloss, borage, buttercups, charlocks, clover (white, red, alsike), comfrey, corn-flower, hawthorn, holly, limnanthes, lucerne, melilotus, mignonette, motherwort, phacelia, rape, raspberry, sainfoin, snowberry, strawberry, sweet scabious, veronicas, dog-rose, &c.—Hy. Dobbie.

BEES AT LAUREL LEAVES.

[372.] What do bees get out of the common laurel? This spring I observed my bees busy at the leaves. They make one or two perforations on the back, near the base, where the first and second pairs of ribs or veins branch off from the mid-rib, and every laurel leaf bears the marks. I enclose a few of the leaves. Now that they are feeding on cabbage, apple, and sycamore blossoms, I have not noticed any at the laurel leaves. If this question has been asked and answered before, I will be glad of the reference.—H. W. Lett.

[The above has been frequently noted by bee-keepers. From the glands, which are the objects of the search of the bees, is distilled and gathered a nectar, or honey-dew. References in previous *Journals* will be found in Vol. V., pp. 34, 72, 74; Vol. IX., two letters on pp. 190, 210; Vol. XI., p. 74, &c.—Ed.]

TEST OF FOUL BROOD.

[373.] I am glad to find that one by one our less fortunate brethren are sending in their experiences with our dread enemy 'foul brood' for publication in your valuable columns. By a letter in your issue of to-day I am sorry to see that my friend, W. G. Smith has not yet eradicated the disease from his apiary. What I wish to know is whether his 'test of disease in the queen' is really any test at all. He commences by placing an empty frame of comb in the centre of an infected brood nest; if the brood in that comb had turned out healthy I presume it would have proved that the queen was not diseased, but 'in ten days fifty per cent of the cells contained rotting grubs.' *Does* this prove disease in the queen? Suppose the queen to have deposited healthy eggs, would not the brood become diseased in that time? As far as I can see many might be led to dethrone healthy queens if they applied this 'test.'—Wm. H. Coldwells, *Balham, 20th May.*

FOUL BROOD.—EAT OR STARVE.

[374.] On my return home after a month's absence I found my nine stocks wonderfully improved. Three had been supered in my absence, and I found them all at work upstairs, two fairly actively, and the third with the sections crowded. Three other hives place me in a dilemma. They are swarms of last year, perfectly crammed with bees, and yet so short of stores that though room is urgently needed, I dare not super them; the weather is so bad, showers of rain and hail, and very cold nights. Apple-bloom yielded little or nothing. My bees seem to have wonderful queens to judge by the great quantities of pollen going into the hives. My three remaining stocks are formed from condemned bees, and they cover seven bars each, and have quantities of brood. I put two colonies driven from skeps in each hive, and they wintered very well. It is very pleasant to see my bees thriving. It seems only the other day when I had only to look at a hive to put it all wrong, and exterminate the unfortunate inmates. I had one hive affected with foul brood last year, and, as some of your readers complain of not being able to make their bees take the phenol in summer, perhaps they may be disposed to follow my example. My hive at end of July was very full of honey, so I extracted it all, and burnt the combs and bars. I put the bees into a new hive on fresh combs of foundation, and with the door shut up with perforated zinc, and a sheet of the same over the bars, I placed the hive in a dark tool-house facing north, and fed with phenol. As it was a case of eat or starve, they ate, and for thirty-six hours I kept them in. For ten days or so they continued to take the phenol, and I am thankful to say I have seen no foul brood since. I got a cast and requeened with it, removing the queen, who was sickly. The colony gave me more extracted honey, but did little in supers. They are now a very fine hive. A neighbour who had foul brood has been giving phenol all the winter, and there is no trace of disease, and the hive is very strong. Your correspondent's bees who take Symington's pea-flour have different tastes to mine. In vain I have offered it—even spoon-feeding the expanded crocuses with it—but my disgusted bees will not approach a manipulated flower, and utterly scorn my attempts to feed them in that way.—Irish Novice.

BEST SIZE SECTIONS FOR GENERAL USE.

[375.] Replying to Mr. Webster's answers (307) to my letter on above (277), he says, in answer to my objection No. 1, that '*the* $4\frac{1}{4}'' \times 4\frac{1}{4}''$ *sections will fit the Standard sized hive by adopting a broad frame as always used; this is absolutely necessary if you desire to keep your sections clean.*' Mr. Webster has evidently never tried it, or his bees are very different to mine. I admit that it *can be done* if one does not mind the expense and extra trouble, although even then there is a waste of side space; but it *cannot be done satisfactorily* unless the frame covers the sections all round, for otherwise the sections will get out of place, and consequently get badly propolised. I have tried the experiment, and am not likely to repeat it.

No. 2. His answer admits the evil, as he suggests a remedy, which, however, is only applicable when a twenty-one crate is used.

No. 3. Here Mr. Webster makes the roof supply the deficiency in height, but what would he do in the case of a flat roof? Say, for example, an inverted tea-tray. (Of course, I mean the principle, not the tea-tray.)

And now as regards his replies to what I have stated to be advantages.

No. 1. As regards the first part of his reply: if he is right, I am wrong. In regard to the second part, I say, Yes. In three tiers of sections this is $\frac{3}{4}''$; in fact, it is six per cent,—not much, perhaps, but it's some.

No. 2. Mr. Webster may be able to '*see at once,*' but I can't; indeed, I've even seen *judges* at shows apparently unable to do so. I have something further to say below as regards packing.

No. 3. Here is the exception, in which he has given me a *quid pro quo,* but, in reply, I can, I think, say that with the exception of bread-and-butter dishes, &c., nine out of ten are neither round nor square.

Neither do I agree with Mr. Webster when he says we must move with the majority. Surely not when we think the latter are wrong.

Certainly bee-keepers can with a '*slight expenditure introduce the* $4\frac{1}{4}'' \times 4\frac{1}{4}''$ *sections into their apiaries*' if they wish to, but so also can I by a '*slight sacrifice*' weed them out of mine. At the time I wrote my letter I supposed that there must be some tangible objection to the $4'' \times 4\frac{1}{2}''$ section of which I was unaware, but since then I have two other reasons, which would alone determine me to use these latter. First, Because it will be distinct from that used in America, viz. $4\frac{1}{4}'' \times 4\frac{1}{4}''$ (which, by the by, they use because it suits their Langstroth frame), and would therefore be to some extent a guarantee to the 'British public' that it was home produce, and not 'maize' honey. Second, Because by using the $4'' \times 4\frac{1}{2}''$ sections I can make a market

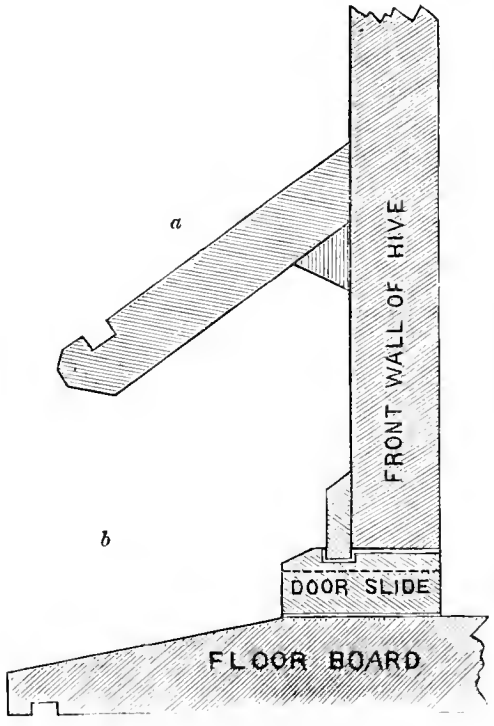
packing-case to hold twenty-eight (¼ cwt.) sections (first to hold the empty ones, to be afterwards replaced by filled ones) very simply and cheaply.

In conclusion, I would remind Mr. Webster that I did not say anything about '*back supering*' (?), or doubling either. He is very sure, but bee-keepers always have been sure, and sometimes wrong. My motto is, '*Chacun à son goût.*'

May I ask 'John Bull' whether he guarantees his statement, that Messrs. Abbott Bros. will always supply the 4″ × 4½″ sections, of course at same price as the 4¼″ × 4¼″?—A. T. Wilmot.

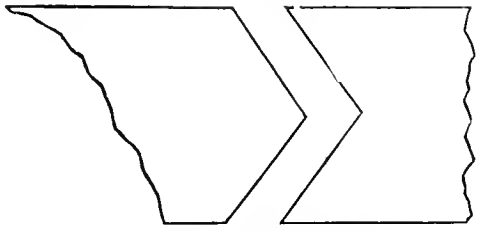
PORCH.

[376.] I enclose a section of a porch and alighting-board with 'zigzag' slide. I make all my hives in this way now, and like none so well. (*a*) is the porch roof



a Porch roof extending all across the front.
b Porch and entrance (the entrance extends the *whole* width of hive). Dotted line marks entrance ⅜ in. high.

grooved to throw off water, and (like the entrance) extending *all across the front*. As regards the entrance, I



Ground plan of slide for doorway as in page 71 of *Modern Bee-keeping*.

think this of great importance; it is often useful in hot weather, and gives great facility for removing dead bees and *débris* from the whole floor, *including the front corners* (which otherwise escape), with bent wire.

If closed ends are desired, they can be added on them by dotted lines on section; and of course the alighting board should be much wider than the section shows.

In putting my hives together, I nail the *front on to the sides*, instead of the sides on to the front, to avoid cutting away for door-slide. I paint all joints with thick paint just before nailing up, and drive all my nails 'dovetail' fashion.—W. E. Burkitt, *Hon. Sec. and Expert, Wilts Bee-keepers' Association, May 12th.*

A QUEEN INTRODUCTION.—A NOVEL METHOD.

[377.] One fine day in March last I examined a hive, satisfied myself of the presence of brood, and was closing it again when I found a dead queen on the floor-board. I was so shocked that I had not presence of mind to look again for eggs or another queen, and had to wait in uncertainty for another fine day, trying meanwhile to account for her death, and wondering if the brood was hers, and were the bees raising another, &c. To my surprise on my next examination I saw eggs and a splendid queen—I think the largest I ever saw—but sho was hybrid, and the bees (which I had bought) were black. I was puzzled until turning up my diary I found that last year in June I had some spare queen-cells, and thinking the queen of this hive was somewhat slow in her movements, and past her second year, I put the finest queen-cell just within the super, simply laid on the bottom of it. In a few days I removed the empty cell—*hatched*. Thus the puzzle was solved, and the benefit of a diary proved. But I should like to ask your readers would you recommend me to try this plan again? It would be so simple for those who keep skeps, and they could easily get queen-cells after a swarm.—R. B. P.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[348.]—*French Books* (F. D.)—I desire to add to the books I mentioned last week *Elevage des Abeilles*, by M. Georges de Layens (two francs).—Melissa.

[349.] *Dead Bees.*—Like 'J. W. S.,' a few days ago seeing about fifty young bees laden with pollen nearly dead within a few feet of the hive, I collected them, and placed them on the top, removing zinc from feeding-hole, and covering them with a bell-glass. The bees quickly surrounded them, and seemed to treat them as friends, relieving them of their burdens, and drawing them into the hive, apparently revived by their attentions.—Charles E. Cuthell.

[353.] *Sections containing Brood.*—I do not think placing brood in supers would attract the queen into them. I think it is most probable the brood would be deserted by the bees, and so perish. I regard every square inch of brood as too valuable to trifle with, but should like to hear how 'J. C. T.' succeeds, as I think any experiment to induce bees into the supers is praiseworthy.—Charles E. Cuthell.

[362.] *Doubling.* (Novice.)—Make stock on body-hive of sufficient size to take ten Association Standard frames, and each doubling-box of the same dimensions so that they will fit one on each other.—W. B. Webster.

[362.] *Doubling.* (Novice.)—The British B. K. A. have offered prizes at the Show at Norwich on the 12th to 16th of July, and at the great National Show at South Kensington, July 30 till August 5, for the best hive for general purposes suitable for doubling to obtain extracted honey, or for tiering up racks of sections for comb honey. Could you not wait till after this and see what improvements the prize hives have, and what they are like?—J. M. H.

[363.]—*Bees Telescoping their Abdomens.* (Rare Sips.)—This action of bees, like the wagging of the tails by dogs, is an outward sign of an inward feeling; and that feeling is one of self-complacency or joy, which the bee, if left to

itself, has so many reasons for possessing. Christopher North (Professor Wilson), in his *Noctes Ambrosianæ*, puts into the mouth of the Ettrick Shepherd (James Hogg) words which indicate the same idea: 'The bees are clinging silently to the flowers, sook, sooking out the hiney-dew till their verra doups (*Anglici*, abdomens) dirl wi' delight.'—MELISSA.

[363.] (Rare Sips.)—The same that makes your chest heave after violent exertions.—W. B. WEBSTER.

[364.] *Supers and Sections.* (Rare Sips.)—It is possible; but your hive will have to be very strong, and plenty of honey coming in. I should confine myself to extracting, and use another hive for sections.—W. B. WEBSTER.

[364.] *Supers and Sections.* (Rare Sips.)—I would advise you to put on the rack of sections first, and when they are about half filled raise the rack and put the Woodbury super between it and the hive. If your bees are strong you would get both filled in this way.—JOHN M. HOOKER.

[365.] *Sections and Extracting.* (Rare Sips.)—If you do not want extracted honey adopt the plan recommended in my answer to 364. A ten-frame hive is large enough for all purposes of storifying, whether doubling or tiering up sections.—JOHN M. HOOKER.

[365.] *Sections and Extracting.* (Rare Sips.)—You can do as you propose very well; of course, you will only get a small quantity of extracted honey.—W. B. WEBSTER.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[378.] *Driving.*—How can I drive the whole of the bees from straw skeps, to make a clean, quick job of it? When I drive some score, or from that to 200, it takes a long time to get them out. I have had a too-large number to finish between my thumb and finger, as they make their appearance on the top of the combs when I have turned the hives up to take the combs out.—CORDWAINER.

[379.] I should be pleased to receive any hints as to the simplest method of raising three or four queens to supersede present ones, as I would like to try the easiest plan for my first attempt. I find the *Journal* a real guide, philosopher, and friend.—IRISH NOVICE.

[380.]—*Figwort.*—What is the experience of practical bee-keepers of the value of *Scrophularia nodosa*, or figwort, as a bee-plant?

BEES AT A LAWYER'S OFFICE.—Not long since, in a famous little town of West Herts, a colony of humble bees settled on the ground, just at the entrance of a lawyer's office. Many were the jokes and gibes occasioned by their presence. 'He that entereth here,' said one wag, 'is certain to be stung!' 'Nay,' said another, 'these bees are non-aculeated; they cannot sting, but they can and do gather honey, so that the motto should be, "He that entereth here is sure of a harvest!"' 'Are you sure,' said a third, 'that these bees are non-aculeated? They are mason bees, and I advise you to test your theory on your own person.' While the discussion was raging, an action of ejectment was brought against the intruders, and immediately executed, so that the dispute was left undecided.

EARLY BEES.—If, as the old adage has it,

A swarm of bees in May
Is worth a load of hay,

good weather prospects should be augured from a still earlier departure from a hive. On Tuesday, April 27th, we hear, Mr. Charity, baker, St. Peter's Street, secured a fine swarm of bees from his apiary. The new colony appear to be strong and well.—*Stamford Mercury.*

THE BEES' PETITION.—O ye bee-keepers! our dear masters, we pray you do have a little pity on us, your humble, hard-working servants. Why should you seek to make our little lives shorter still by giving us slippery-sided boxes and cold receptacles, in which we are condemned to waste our time, energies, and shoe-leather, to get in and out of them; and also will not be satisfied with our best endeavours on your behalf, but you must urge us to harder work with your extractors and mell-pells. Are we to be improved entirely off the face of the earth? or only suffered to exist just to show what we once were? Give us, we pray you, fair play, and we will do our very best; only do leave us alone to do it in our own way.—Your humble servants, APES.

Echoes from the Hives.

South Cornwall, May 29th.—As your next number will be dated in another month, it seems fitting to report progress. There is with many people an impression that this county is a very early one, forward in vegetables, fruits, bees, and what not. It is a most erroneous idea. In certain favoured localities near the coast, and literally *on* the coast, there is early produce; but on high ground quite near, we are not in advance of what is reported from counties in the east and south of England. We have had the unfavourable weather you write of in your last, with only a few fine days interjected, and there is no mistake about the result which this produces on our hives. Some stocks in skeps have swarmed—one did so last week. On Monday last one departed and returned, and yesterday another took its flight and was captured. Well, I wish it luck! The weather is fine by day, and honey in small quantities is coming in; but the nights are bitterly cold, and two days ago there was a shower of hail. I am satisfied, from inspection of my own hives, how much the weather has to do with the increase of the family. A considerable store of old honey in the hive does not stimulate the queen in cold weather. Perhaps she feels, as I do, that I might as well not have left it; but I thought to save time and trouble—an important consideration. I fear there will not be much honey of this year for early shows. Our annual exhibition is to be held at St. Austell, in connexion with the County Agricultural Show, on June 23rd and 24th. —C. R. S.

North Cornwall Apiary, May 29th.—A few bees have been on the wing more or less every day during the month with the exception of three days, when they were kept in altogether, but very little work has been done, as the weather has not been so propitious for bees in this neighbourhood as was at first anticipated. The air has been for the most part very chilly, the winds boisterous, storms of cold rain falling frequently. I have only been able to record nine really warm days on which the bees could work freely without interruption.—THE MANAGER, *Rowe, Bodmin.*

Lismore, Ireland.—Bees wintered well here. I know of a few losses from neglecting spring feeding. The storm on Monday week last destroyed masses of bloom of all sorts, and the hail-showers since have done much harm. This time last year I had lots of honey in the hives.—IRISH NOVICE.

Rathcoursey, Cork, May 27.—The outlook is, I fear, poor for honey: no apple blossom. Shocking weather since 15th. Has retarded stocks that have bred but slowly this year.—JOHN P. SMYTH.

Pallanza, Italy, May 29.—The bee weather about here has been lovely, and a fortnight's uninterrupted fine weather has enabled bees to store plenty of honey from acacias, and quantities have already been extracted.—T. W. C.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

W. K. R.—Enamel cloth has been proved to be a suitable covering for frames. Both samples of enamel cloth forwarded are suitable; No. 2 is the better of the two.

A Cottager.—*Excluder-zinc.*—There is no necessity for excluder-zinc between frames and sections, the distance between the sections prevents the ascent of the queen.

A. B.—*Carniolans.*—The Carniolan is a large bee, and is distinguished from other bees by its silvery appearance, caused by the abdominal rings of white hairs. See Vol. xii. pp. 110, 123.

P.—When the honey-glut comes, the bees will then most probably draw out the remainder of the foundation.

S. R.—Please consult previous numbers, in which you will be able to derive the information how to get bees out of trees.

R. I. S.—The bees arrived in a sad plight. The honey from the piece of comb had exuded, and the bees were drenched, drowned, and distended. It was not possible to say what had affected them.

R. J. Collisson.—1. M. Bertram's fumigator may be procured from C. T. Overton, Lowfield Apiary, Crawley, Sussex. It should be used in accordance with directions in Cowan's *Guide-book*, p. 138. 2. The queen having been forwarded to Mr. Cheshire for his examination, he writes, 'The queen I have carefully dissected, but found no evidence of disease.—F. C.'

Advance.—We are obliged to you for your note. We shall have much pleasure in giving insertion to Mr. Clowes' mode of queen-introduction.

H. W. L.—*Old Combs.*—Combs may be used with advantage eight or nine years. After this the cells become reduced in size through the accumulation of cocoons so that the young bees do not attain to their normal size. It has not, however, been proved that they are permanently smaller in size.

J. P.—*Salicylic Acid Solution.*—You will find a full reply to your question by referring to answer to 'Woodland.' Reply to your second question will be given next week.

Virtuoso.—1. *Glazing Sections.*—See reply to 'Subscriber' in our number for May 13th. As several have made inquiries about glazing sections recently, we have requested 'Amateur Expert' to write us more fully on the question, and he has promised to do so next week. 2. The piece of American cloth forwarded will be found suitable.

L. W., *Wheatley, Oxon.*—In further answer, we say that the two bees sent being in such a smashed-up state we found it next to impossible to detect anything foreign upon them; any extraneous matter appeared to consist of crystals of sugar, salicylic acid, or some other salt, with here and there pollen-grains of a composite flower, most likely of coltsfoot or daisy. The surface of the body where denuded of hairs appeared whitish, but nothing that we could detect to indicate disease. Here and there upon the wings, and upon a wing sent subsequently, we have found in but a very few places, and very sparsely scattered, what at first appeared to be a compressed hair; but on further examination we found its size and manner of branching very different, and we should think it some kind of fungus which would produce disease and have never seen anything like it before upon a bee—its structure or method of fruiting would enable us to determine its species; and these we are not able to ascertain, and would be glad if our correspondent would forward us further specimens for examination, and also describe, as minutely as possible, what means he took to winter the hive and what with, so that more light may be thrown upon this interesting subject.

F. D. M.—1. *Layens' Hive.*—You will find a description of the Layens' hive in the *Elevage des Abeilles*, by Georges de Layens, the first edition of which was published in 1874; since which time it has passed through several editions. 2. *Flat-topped Hives.*—The Grecian is a very good flat-topped *straw* hive. 'Pettigrew's hive,' though too large for many districts, is another good one. In fact any well-made flat-topped hive, of medium size, will answer the purpose. 3. *Storifying Hives.*—Storifying hives must necessarily be *flat-topped*. The Stewarton, and Carr-Stewarton, are among the best. 4. *Bee-Books.*—Most bee-books, both ancient and modern, give engravings of the different kinds of hives in use in their own times, with description. See Bevan, Dzierzon, Cowan, &c.

Woodland.—*Salicylic acid.*—Given in the manner you state, viz., 4 lbs. of sugar syrup, boiled half-an-hour, and ½ oz. of salicylic acid stirred into it while boiling—was quite enough to have killed all your bees. No wonder that you succeeded in killing about half of them. The wonder is that the bees took the syrup at all. They must have been perishing from want of food, or they would not have taken it. In our answers to queries, respecting the application of salicylic acid, we always refer to the recipes given in Mr. Cowan's *British Bee-keepers' Guide Book*, page 151, which book we strongly advise you to purchase. The price is 1*s.* 6*d.*, and by consulting it you would have saved the bees you have destroyed. For your benefit we give the recipe: salicylic acid, 1 oz.; soda borax, 1 oz.; water, 4 pints. The acid and borax to be well rubbed together and dissolved in the four pints of warm water. Of this mixture, or solution, 1 oz. *only* (about half a wineglassful) is to be added to the *whole quantity* of syrup, made from 10 lbs. of sugar and 7 pints of water. You will readily perceive, therefore, how strong a poison you have administered to your poor bees, since the quantity of salicylic acid, prescribed in the above recipe, is *quite* as much as can be given with safety.

A Kent Bee-keeper.—1. *Introducing Italian Queens.*—Introduce the Italian queens to your colonies of medium strength. 2. *Artificial Swarm.*—If the skep is full of bees, and preparing to cast a natural swarm, drive out about two-thirds of the bees to form your swarm, and place this swarm on the stand of the old stock. If not in the place you wish it to occupy, move it two or three feet every fine day until you have it where you wish. The old stock may be moved to its new stand at once. 3. *Transferring.*—It is better to allow the skep to remain *in statu quo* for three weeks before you transfer it to frame-hive.

Amateur, *Durham.*—*Skeps versus Frame-hives.*—The general consensus of opinion is in favour of bar-frames. In the absence of any details, we can only suggest that over-manipulation may be the cause of your bar-frame hives not giving so good results as your skeps. The temptation to be constantly opening them to see how they are going on is often too great.

E. V.—*Storifying.*—If your stocks are strong they will no doubt accept an upper storey of eight or ten empty combs when there is sufficient honey coming in to cause them to require storage room. By placing a frame or two of brood in the upper storey, you will be likely to attract the bees to accept it.

X. Y. Z.—*Large Number of Drones in a Stock.*—As you appear to have transferred your stock from a skep to a frame-hive, we presume that you rejected the drone-combs. If not, remove them from the hive, and in those combs containing both worker and drone-brood, destroy the latter. This will prevent any further undue production of drones, but do not seek to remove those already existing.

R. G.—*Increasing Strength of Stock now covering Six Frames.*—Place the frames partially filled with brood between those wholly filled with it. Keep warm, and if the weather is cold, and no honey coming in, feed gently, not rapidly. As the combs become filled with sealed brood, give another comb in the centre.

H. C.—*Preventing After-swarms.*—It is not necessary that the hive containing the swarm should be similar in appearance to the parent hive; but, the choice being given, we should prefer the two hives to be like.

S. R. H. G.—*Bees Deserting.*—It is impossible to say what caused the bees to desert their hive and brood. The angry mood of the colony, a few days previous to their desertion, would seem to point to robbing as the cause. Or it might have been want of food. The late inclement weather, during which no honey has been obtainable, has caused speedy consumption of stores and a good deal of robbing. We presume you have no pests—such as ants, or mice—to disturb and annoy your bees.

A. A. H.—*Artificial Swarming.*—If the frames of your hives are of the same size and pattern—*i.e.*, are interchangeable—you cannot follow a better plan than that advised by Mr. Cowan, on page 84 of his book, given under the heading, 'To make two colonies for one.' If the frames are not interchangeable, the queen should be removed

from the Cheshire hive, and the Abbott hive, fitted with foundation, being placed on the stand of the Cheshire, about half the bees should be shaken from the frames of the latter on to a board, or sheet, in the front of the former, and as they run in the queen should be placed amongst them. The Cheshire hive must then be removed to a new stand. These operations must be performed at midday, on a fine day only, and the swarm must be fed.

W. Mitchell.—*Moving Hive.*—If the weather continues cool you may remove the colony in the skep to a distance of a quarter of a mile without losing many bees—perhaps none. Let the entrance be closed, late in the evening, when all the bees are at home, and the skep carried carefully to its new stand, when the entrance must be opened and a board set up in front of it, so as to shade the entrance. This will cause the bees, when flying out, to mark their new location, and few will fail to return to it. After two or three days the board may be removed. Remove from the old stand all marks of the former domicile, and disguise the place as much as possible.

Chips.—*Rack of Sections for a Skep.*—Unless your skep is a very large one, a rack of twenty-one sections would be too large. The usual size of rack contains eighteen (see *Modern Bee-keeping*, p. 52). For this a case is provided which fits over the hive, and contains the sections; it is 15 inches square inside and 9 inches deep. If the rack is properly constructed, no excluder is required, the spaces between the sections themselves excluding the queen.

Something New and not Patented.—*How to insert foundation in supers.*—Take a flat-iron, such as is used for smoothing linen; place it near the fire to hot; place sections on a board; cut foundation; when hot set it across sections. Be careful not to scorch; remove iron; press starter quarter of an inch with thumb or finger; turn up at right angles; then fold.—A Cottager.

Beeswing.—'Inquirer' (Dublin) tenders his sincere thanks to 'Beeswing' for encouraging explanation of raw smell. The uncooked-meat smell is already wearing away. Hives prosperous. 'Nucleus's' remark noted. Blacks all dead now. There was no uniting, as suggested by the Editor.

Bee-keeping in Suffolk.—A correspondent writes: 'I find that bee-keeping in Suffolk has been much neglected. I am desirous of stirring up the cottagers to take more interest in their bees, and to keep them on better principles.' What has the Suffolk Association been doing since its formation to leave grounds for such a statement? Our correspondent has already made one county to go, and we feel sure that we shall shortly hear of better doings in Suffolk.

Manipulating Bee-house.—If 'Beeswing' will send to Pope & Sons, Downham, Norfolk, they will forward him a list of rejected army tents and marquees, with engravings of same. They are low in price, and well adapted for supplementary tents at bee-shows, &c.—J. Lawson Sisson.

A correspondent writes: 'There is no flower gives more pollen than orange gourds, pumpkins, and vegetable marrows, and all that family of gourds. I have seen them rolling in the flowers at 5 a.m. till I could see nothing but pollen all over them. I had to look sharp to get any to impregnate the female flower.'

'Novice' writes: 'Some correspondent recommended water and meal for bees; he would be obliged by his stating the proportions.'

In your reply to R. L. Richardson you say, 'great care should be taken in inserting foundation that it should hang perpendicularly.' Whatever care is taken in putting the foundation in the frames, the combs will not be properly built to fill them unless they themselves hang perpendicular. When a hive is put into the position it is intended to occupy it should be perfectly level across the frames, the weight of the bees when building out the comb would then cause it to hang true in the frame and be so built.—John M. Hooker.

I have tried perforated zinc for the bees to alight on instead of wood, but it does not answer. The bees never alight on it on their return home with a load, but always set themselves down on the wood if possible.—Mid Cornwall.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

June 17, 18.—Essex County Show, Brentwood. Secretary, F. H. Meggy, Chelmsford.

June 29-July 5.—Hives, Honey, &c., Royal Horticultural Show at Liverpool. Entries close June 10th. Secretary, J. Huckle, Kings Langley.

July 12-16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Post Entries to June 1st. Secretary, J. Huckle, Kings Langley.

July 22, 23. Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 30-August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

Hants and Isle of Wight Bee-keepers' Association.

June 24, 25, 26, 28.—Royal Counties Agricultural Show, Portsmouth. Entries close June 17. Secretary, E. H. Bellairs, Wingfield, Christchurch.

July 14.—Swanmore.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Benton, F., Munich, Germany.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Lyon, F., 94 Harleyford Road, London, S.E.

COMB FOUNDATION.

Abbott Bros., Southall, London.

HARRY F. ROW,

MANUFACTURER OF HIVES,

And every BEE-KEEPING APPLIANCE.

THE 'DAVIES' HIVE

was Awarded the BRONZE MEDAL at the HEALTH EXHIBITION for the 'Cheapest and most Useful Hive.' It has double walls throughout, 15 Frames with Metal Ends, Crate of 33 1-lb. Sections, Dummy and Quilt, Roof, Legs, Porch, Alighting-board and Entrance, Shutters. Price, 21*s.*; or painted, 24*s.* Small size, containing 9 Frames and 21 Sections, 15*s.*; painted, 17*s.*

STEAM-POWER HIVE FACTORY,

BRAINTREE, ESSEX.

CHEAPEST HOUSE FOR

BAR FRAMES & SECTIONS

IS

A. DONNELLY & CO.'s, Lurgan, Co. Armagh.

PINE BAR FRAMES, good finish and morticed. Ardmere pattern. 1*d.* each; or 7*s.* per 100.

15¾ PLAIN TOP BAR, Standard size, with Groove for Foundation. 1*d.* each; or 7*s.* per 100.

17 in. PLAIN TOP BAR, Standard size. 1*d.*; 8*s.* per 100.

17 in. BROAD-SHOULDERED BAR FRAMES, Standard size, with either Slit or Groove for Foundation. 2*d.* each; or 14*s.* per 100.

BASSWOOD SECTIONS, of superior quality and finish, V-joint, with either plain or curved openings. 1 lb. size is either 4¼ × 4¼ × 2, or 4½ × 4 × 2, and in either one or fourpiece. 2*s.* 8*d.* per 100; or 23*s.* per 1000 case.

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IMPROVED SMOKERS (the best in the market), 2*s.* 4*d.* each. Sent by parcel post anywhere in the United Kingdom for 2*s.* 10*d.*

NEIGHBOURS' FEEDERS, plain, 10*s.* per doz.; improved, 11*s.* per doz.; or 1*s.* each.

A Substantial Reduction will be made on these prices to large buyers. A 672

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ENTIRELY supersedes the Smoker, both in simplicity and effectiveness. No 'going out,' as no fire is used. Always ready for use, no matter how laid down, without any extensive preparation. No tainting of honey. No dirty liquid dropping from it to soil combs. Quite portable, can be carried in pocket. Will subdue the most vicious of bees. Can be fitted to any smoker-bellows.

Mr. F. CHESHIRE writes: 'I find—by experiment—that the most vicious Eastern Bees are utterly beaten at once.'

Price 4s. 6d. complete with Bellows; post charge, 4½*d.*

3s. without Bellows; post charge, 3*d.*

BOTTLES OF AGENT FOR USE WITH VICIOUS BEES, 6d. EACH.

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A 596

Bronze Medal awarded for Straw Skeps at the Great Crystal Palace Show, 1875.

Seventeenth Edition. Price One Shilling.

SEVENTY POUNDS A-YEAR:

HOW I MADE IT BY MY BEES.

By the late J. W. PAGDEN.

Also, by the same Author, price Sixpence.

EARLY ARTIFICIAL BEE-SWARMING.

NO WATCHING REQUIRED.

Apply to Mrs. J. W. PAGDEN, The Chestnuts, Alfriston, Sussex, by whom the same manufacturers of 'Economical Bee Furniture' are employed as formerly. (140)

THE BEST FOR SKEPS. THE 'TRIUMPH' SUPER.

A STRAW SUPER, well made, light, and warm. Combs can be removed, emptied, and replaced. Bees will take to it when Sections are left untouched. *Specially adapted for Storifying.* Holds 18 lbs. Easy to Manage. Covered Window for Observation. Comb Starters fixed.

Ready to put on Hive. Carriage free for 4*s.* 6*d.*

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DR. PINE'S BEE-KEEPERS' VEILS

Cannot be blown against the face:
Do not obstruct the sight, nor confine the breath.

The Journal of Horticulture for April 3rd, 1879, says:—'We have seen nothing better as a protection to the bee-keeper when working among his bees, than Dr. Pine's Veils. . . . . The whole upper of the body is effectually defended from the attacks of the bees, while the clearness with which the work can be observed through the wire netting is so great, that no difficulty is experienced in performing any of the operations of the apiary in perfect safety.'

Prize Medal, B. B. K. A., 1879, for the best Bee-dress.

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Every genuine Veil bears the accompanying Registered Trade Mark; others are, more or less, inferior imitations.

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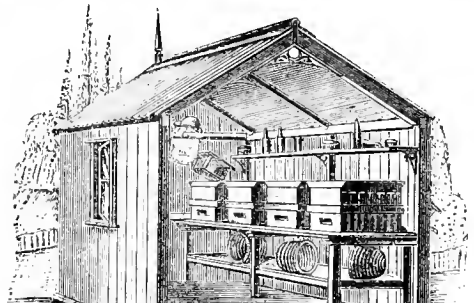
Strips of Specially Woven Wire, with selvage each edge, for making them, 1*s.* 2*d.* each, post free, of the Inventor and Proprietor—F. LYON, 94 Harleyford Rd., London, S.E. (3)

BOULTON & PAUL,

Manufacturers, NORWICH.

Manipulating or Bee House.



THESE Houses are well made, and painted three coats. The sides and lining to roof are covered with tongued boards, which are bee-proof; roof of corrugated iron. They are very portable, being jointed with bolts and nuts. Any one can put them together.

With Revolving Window for turning the Bees out, Bench for working on, or for standing Hives upon, Floor, and Door to lock, complete.

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THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

SOUTH KENSINGTON EXHIBITION.

The following donations have been added since our last issue :—

Beds Association	£1	1	0
W. Whitmore Welch	1	1	0
Cornwall Association	1	1	0
Surrey Association	5	0	0
Previously acknowledged	146	6	0
	£154	9	0

FROM CREATION TO 384 B.C.

(*Continued from p.* 242.)

It was supposed, says Aristotle, that those bees which made rough and imperfect comb did so on account of their youth and inexperience, not yet having gained a perfect mastery of the art of comb-building. Such workers as these were thought to be but one year old, and then we come to a curious —and not very flattering—statement, to which a certain portion of the bee-keepers of the presen. day may take great exception. The historian says 'that the older bees stay at home and did the work of the hive and thus became hairy, while the young ones, going into the fields to work, became smooth; and it is added that the small bees were more industrious than the larger ones, so that their wings became worn at the edge and their colour black and burnt, but the bright and shiny bees were idle, like women.'

Swarming, of course, could not fail to attract the attention of the most primitive bee-keeper; and bees are accustomed, as many know to their cost, to be most obstinate and self-willed in this the exercise of their power of increase, and often in spite of the greatest care of their master to carry out their instinctive desire; much more so when no care to prevent was exercised. Swarms were thought, at the time of which we are writing, to be imminent when a peculiar and singular noise was made for two or three days and the bees were suspended one upon another in the hive, on seeing which the bee-master was accustomed to sprinkle them with sweet wine. The fact, too, that bees at the time of increase are little inclined to sting was also recognised, although a different reason was assigned to account for a like result. So 'young bees do not sting so severely as old ones, for this reason the swarms are carried to the apiaries, for they are composed of young bees.'

Another curious case, and this time it is the earliest mention, I believe, of the use of smoke to quiet bees while being handled. For smoking we are told caused the bees to do what at other times they carefully refrained from doing, namely, eating their honey which they had stored for future use, and so gorging themselves with the result that they could be handled without fear. But yet, again, a tribute paid to the gratitude of bees, for 'when a swarm had been weak, strange bees had been known to come and fight with them and take away their honey,' but when the bee-keeper killed them (the robbers) 'the others came out and defended themselves, and would not injure the man.' I have not found this to be the case, in fact probably many bee-keepers have failed to receive so marked a sign of gratitude from the hives they have saved from pillage.

Again, it was said that bees delighted in noise, and accordingly at swarming time a noise was made to induce the bees to settle. This is an early mention of the past—shall I say?—custom of ringing swarms. It was also believed that insects slept—remained at rest without movement—and particularly the bee, which remained quiet and ceased to hum during the night, for there was silence in early morning until one bee aroused the rest by humming several times, when all awoke to work. At night again there was at first some little noise until the hum resounded, when all was still and silence again pervaded the hive. Of bees themselves little more can be said at present, but a little time may be given most briefly to consider bee enemies and bee diseases.

Of bee enemies the chief ones recognised were the wasps, titmouse, swallow, bee-eater, frogs and toads: and of the way the last-mentioned went to work, according to the view of the primitive bee-keeper, an amusing idea is given; for the toad, it is said, blew into the hive and then awaited the bee, which came to see the cause of the disturbance, and ate it. Wasps were trapped by setting flesh in a pan, and when the pan contained a goodly number of the thieves, the pan being placed upon the fire soon ended the lives of these

pests, which even now give no little work, if stocks are not kept strong enough to thwart their efforts by offering an obstinate resistance.

Three diseases of bees are mentioned, and two at least of these can be identified as the same with which the bee-keepers of the present day are troubled. These diseases were (1) cleros, (2) teredo, (3) wildness.

Cleros was a disease apparently our 'wax-moth,' for we are told that the form this disease took was that insects were produced in the hive which destroyed the comb, a also a little spinning worm, which did the same kind of injury. This creature produced a spider-like animal like itself, which caused sickness in the hive, and also another creature like the moth, which flitted about the candles. This again produced a creature filled with a woolly substance. It was not killed by the bees and could only be ejected by smoking.

2. Teredo, a caterpillar, was also produced in the hive, and this, too, the bees did not drive away.

3. Wildness in bees was a disease giving evidence of its presence by a strong smell, and the cure used in this case was feeding on thyme, and in close weather placing in a cool place, and in cold weather in a warm place. With this, the earliest record ceases.

Such is the history of the bee-keeping of the above period, as far as it can be given in so small a space. It is a subject of general interest, and although for practical purposes it may not be of any assistance, it will store up in the mind a sense of the past greatness of great men. If it is possible, and the needful space is at my disposal, I may endeavour during the long drear nights of the winter to give another outline of a period subsequent to the one which has been engrossing our attention, and so little by little give an idea of bee-culture as it has been from the creation onwards, until in the course of a few more columns the time is arrived at when modern literature, taking up the thread of ancient practice by careful interweaving and splicing, has brought it to its present perfection of completeness.—Thomas Marriott.

USEFUL HINTS.

At about this time last year we were experiencing tropical weather. Bees were swarming out of hives and supers, betaking themselves to the woods, and other places which seemed to strike them as more agreeable than their over-heated hives in such boiling weather. All this took place after a cold May, in which snow was constantly reported from various localities, with cold winds and frosty nights. But there was one important point of difference between May 1885 and May 1886, the latter being an exceptionally wet month, and, partly in consequence of this, but more perhaps owing to the long and severe winter, our bees are in much worse condition than they were in 1885. Then, numerous cases of sections were completed by this time. Now, we have not heard of a single case being filled. The low temperature and the excessive rainfall have prevented the secretion of nectar in the various blooms already past, and, even if the bees have been able to pay them visits, the storage of honey has been almost *nil*. Our only hope would now seem the clover-blooms, and our chief attention must be devoted to keeping up the strength of our colonies, and, at the same time, to prevent the issue of swarms, until the hoped-for change of weather and consequent honey-flow sets in.

Swarms, either natural or artificial, must be fed, not however too freely, lest the newly-built comb should be clogged with the stored syrup, and the queen prevented depositing her eggs from want of vacant cells.

Much depends on natural income. During a continuance of cold weather and short honey-flow, bees will consume a large amount of syrup in the elaboration of wax for comb-building. But, on the other hand, with a copious influx from the fields, little or no syrup will be required. Then again, the supply of combs or foundation, and the size of the swarm, are all factors in the amount of food required. Indeed, in bee-keeping, as in all other pursuits, upon the 'What, when, and how' to do it, success entirely depends. Half a century ago, we call to mind the dictum of a celebrated physician of our acquaintance, who, having two sons, one a clever youth, the other somewhat dull, announced—and carried out—his intention of making the former a doctor, and the latter a parson, for, says he, 'a doctor to succeed must be a clever man, but any simpleton will do for a parson!' an assertion which, as regards religion, or even morality, we are pleased to believe, has no place in our day. Nevertheless, we are disposed to think that a man to become a successful apiarist must learn to think and act for himself, under the endless varieties of circumstances for ever presenting themselves, and, to say the least, must not be a born simpleton.

Examine swarms about once in three days, to ascertain the straightness of the new combs, and to remedy any defects. If any are built cross-wise, they must be at once set straight within the frames, and must be very carefully handled, or misfortunes will occur from the falling of combs and injury to eggs and brood. All hives should be set perfectly even, by means of a spirit-level, when the combs will be built straight. Let the manipulation be performed during the flight of the bees, and in shade, carbolic solution applied above the frames being preferable now to smoke as a bee-quieter.

Smoke, of which most perhaps use too much, should only be applied to old-established colonies, and that in very small quantities. The evil of injecting too much smoke into hives arises from the sudden flight of the bees preventing them from filling their honey-sacs, and rendering them almost unmanageable. Under such treatment, angry beyond measure, they freely use their stings, and are most difficult to subdue. As a rule, then, use no smoke, or *very* little, at the entrance, and merely a few puffs occasionally across the tops of the frames to keep the bees below.

Artificial Swarm. Re-queening. Removal.—The following proposition having been referred to us for solution, thinking it may prove generally useful, we give our answer here. *Proposition.*—Given, two strong colonies in frame-hives, A and B. It is required to form a third colony, C, to re-queen the three colonies with young queens raised from the best queen in A or B, and to remove them to a new locality, say, at a distance of one mile at least. *Solution.*—About the hour of noon, on a fine day, when bees are in full work, divide A into two equal parts, say, five frames, containing bees, eggs, and brood, in about equal numbers in each part. Place the part containing the queen on A's stand. Remove B to a new stand, distant at least twelve feet from its old one. Place the queenless part of A (which we will now call C) on B's old stand. Give to A and C each two frames of worker comb, or foundation, on the outside of their brood-combs, confining, between two division-boards, the seven frames in each hive. Close the hive until evening. Next, let A contain a better queen than B. In the evening, when bees have ceased to work, remove the queens from A and B. On the tenth day afterwards select from A or C two sealed queen-cells,

large and well developed, cutting them out carefully, and insert them in B, having first removed all its queen-cells. Two good queen-cells only should be left in each of A and B. In twelve days after the excising and insertion of the queen-cells the young queens should be laying in all the three hives, which fact being ascertained, the hives may then be removed to their permanent locality, the removal being made late in an evening, and a board set up in front of each hive to cause the bees to mark their new station. If preferred, the hives may be removed within five days after the artificial swarm was made, and the manipulation of the queen-cells may be performed in the new location, drones being in sufficient numbers.

From which Hive is the Swarm? is a question often asked and rarely answered, unless the swarm has been seen to leave the parent hive. If the hive has been supered, the desertion of the super will prove the departure of the swarm. When there is any doubt, and it is important to know from which hive the swarm has issued, after hiving it and placing it upon the stand it is to occupy, take a handful, or a small box full, of bees from the swarm and toss them up a short distance from the hive suspected to have cast it. These bees will return to the parent hive, and will stand fanning at the entrance.

All our old hives have a small window at the back, about 3 inches square, by means of which we are able to tell both when a hive is ready to swarm, and when a swarm has recently departed, by the crowded or diminished population. Years ago, on returning home one evening, a peep through the window of a strong hive of Italians disclosed the fact that a large swarm had departed. In vain we asserted such to be the case to the 'Guardian of the hives'—call him Priapus if you will—'Hadn't he been watchin' the blessed bees all day long? He was sure no swarm had gone from that heeve.' Despite all these asseverations we insisted upon a strict search of all the hedges and bushes in the neighbourhood, Priapus taking one direction, 'Booy' another, and ourselves a third. After an hour's search, just as the 'shades of evening were closing o'er us,' the whoo-oop of Priapus announced the joyful fact that the swarm was found. High up in an ash-tree, about 100 yards from the apiary, around an arm of the tree, was clustered the vagrant swarm—a beautiful swarm of 'yellow-jackets,' weighing over 5 lbs. Light failed us for its removal, so it remained until sunrise on the following morning, when it was secured and returned to the apiary, our Priapus exclaiming, 'Right you was arter all, sir; but hang me if I 'oodent a bet a pund it hadn't swarmed at all, at all.' By means of a back ventilator, Dr. Dzierzon states that he is able to make the same discovery as we through our windows.

Tiering Up.—When the auspicious change of weather comes, and the fields are redolent of the delicious scent of the white clover, do not neglect to 'tier up' section cases. Many a pound of honey is lost from not giving sufficient room for storage, and the bees either swarm or become lazy. Never allow them to hang listlessly in clusters upon the hive front, but give air below and section-cases above, always placing the empty one *below* the partially filled one. There are those who advocate the opposite plan, but, except at the close of the season, we have never found it succeed. Then, indeed, when honey comes in slowly, and sections are only partly sealed, room being required, it may be well to give it *above* by placing an empty case over the unfinished one. By doing this the sealing over is often accomplished more quickly, but—

'In the midst of the honey-flow,
Always place your "case" below.'

A good section-case, capable of being 'tiered up,' or inverted, while admitting the minimum of propolisation, and consequent discolouring of the sections, we have not yet seen, but trust that at some of our forthcoming shows such a desideratum may be produced.

Frequent Manipulation.—Dr. Langstroth has laid it down as an axiom that 'Practical bee-keepers should remember that the less they disturb the stocks, on which they rely for honey, the better.' Hives should not be needlessly opened, and the bees should not be so much interfered with as to feel that they hold their possessions by an uncertain tenure; such an impression will often impair their zeal for accumulation. Those who, during the late inclement weather, have been careful to feed, and to economise the heat of the hive, will fare better than those who have been over-manipulating, when the honey comes at last.

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Meetings of the Committee were held at 105 Jermyn Street on May 19th and June 1st. Present: Hon. and Rev. H. Bligh (in the chair), Rev. Dr. Bartrum, Rev. F. G. Jenyns, Rev. G. Raynor, Rev. F. S. Sclater, Rev. F. T. Scott, Rev. J. L. Seager, Captain Bush, J. M. Hooker, H. Jonas, D. Stewart, G. Walker, W. O'B. Glennie (Treasurer), and the Secretary. The Examinations Sub-Committee reported that owing to only two candidates having entered for the first-class examination it had been resolved (with the consent of the candidates) to postpone the date of the examination to Tuesday, August 3rd, being the fourth day of the South Kensington Exhibition.

In view of the Show being fixed to open on July 30th, it was resolved to abandon the Quarterly Conversazione fixed for Wednesday, July 21st, and the Secretary was requested to write to Mr. Grimshaw (who had promised to read a paper on 'The Vocal Organs of Bees') expressing their regret at being compelled to postpone the meeting.

The Exhibition Committee presented the prize list as prepared for the South Kensington Show. It having been considered, it was resolved that the sub-committee do issue the same forthwith.

The revised copy of *Modern Bee-keeping* was submitted, and the Secretary was instructed to send a proof copy to each member of the Committee for approval.

The Rev. Geo. Raynor, the Rev. F. G. Jenyns, the Rev. J. L. Seager, and Mr. J. M. Hooker, were elected to act as judges at the Norwich Exhibition. The Rev. Dr. Bartrum, Mr. W. B. Carr, of Bebington, and Mr. W. Carr, of Manchester, were elected (jointly by the Lancashire and Cheshire Associations and the B.B.K.A.) as judges for the Liverpool Exhibition.

It was resolved that the Committee do hold their next meeting on Wednesday, June 16th, and the succeeding meeting on Wednesday, July 7th, at 3 p.m. on each day.

IRISH BEE-KEEPERS' ASSOCIATION.

A Committee meeting was held at 35 Trinity College on Tuesday, June 1st. The hon. secretary reported that Dr. Traill had kindly promised the use of his class-rooms for committee and other meetings. It was decided to hold a conversazione on Thursday, June 17th, at eight p.m. Postcards to be sent to members inviting papers and exhibitions of apiarian subjects. Meeting open to members and their friends; also to the press. It was proposed at the next committee meeting to try and make arrangements for the sale of members' honey.

DEVON AND EXETER BEE-KEEPERS' ASSOCIATION.

The first exhibition for this season of the above Association was held in connexion with the Devon County Agricultural Society's show at Axminster on

May 18th, 19th, and 20th. The show yard was prettily situated in the grounds of Mr. Knight about half a mile from Axminster. The first day the wind and rain was so bad that the Bee tent could not be put up. The next two days were better, and though the weather was still rather against us, Mr. Baldwin managed several manipulations. There was no new honey shown owing to the late season, but some excellent specimens of 1885 were staged. The appliances were exceptionally good. A new feature in the show was various things made with honey—honey chocolate, honey and fruit liqueurs, honey lemonade, &c., &c. The judges were—W. Horton Ellis, Esq. (Exeter); Rev. J. Bartlett, J. Thacker, Esq.; and R. P. Kitson, Esq. The following were the awards:—

1. For the best exhibition of comb honey of 1885 in section. 1st, J. Thacker, Esq.
2. For the best dozen jars of run or extracted honey of 1885. Rev. J. A. Kempe.
3. For the best sample of bees-wax in cakes of not less than 1 lb. Rev. J. A. Kempe.
4. For the best straw-hive of bees not being a swarm of the present year, open to cottagers only. J. Sanders.
5. For the most perfect bar-frame hive with cover and stand. 1st, S. J. Baldwin; 2nd, E. J. Butt; 3rd, H. Moxey.
6. For best wood or straw moveable comb-hive suitable for cottagers. 1st, S. J. Baldwin; 2nd, E. J. Butt.
7. For the best straw hive for depriving purposes. S. J. Baldwin.
8. For best sample of comb foundation (part for stock and part for super) manufactured in the United Kingdom. 1st, S. J. Baldwin; 2nd, equal, H. Moxey, E. J. Butt.
9. For best collection of agricultural appliances. 1st, S. J. Baldwin; 2nd, H. Moxey; 3rd, E. J. Butt.
10. For best honey extractor. S. J. Baldwin.
11. For cheapest and best sectional super. 1st, equal, S. J. Baldwin, H. Moxey.
12. For best bee feeder. H. Moxey.
13. For any useful apparatus connected with bee management. Special prizes to Fry and Sons for 'honey chocolate'; Mr. Beckett, honey and fruit liqueurs; S. J. Baldwin, patent lever honey tin.

The County Show will be held at Lynton on August 2nd. Schedules may be had from Messrs. Godfrey, Chapel Street, Exeter.

Foreign.

CYPRUS.

While the demand for Syrian bees is less active than formerly and Palestines are only rarely wanted now, Cyprians are gaining friends in every country of the world where they have been tried. Whenever thoroughly tested in their purity side by side with any other Eastern race they invariably receive the preference. This is just what I thought years ago would be the case and what I said repeatedly. It was in deference only to the statements of many older than I, that this opinion was not brought forward with more persistency, but all who were so pronounced in advocating (under the name 'Holy Land bees,') the superiority of the two races first mentioned over Cyprians have now had ample time to discover their mistake and rectify it if they wished to do so; and though, during the past season, I have been better able to execute orders for Syrians than Cyprians, I shall let nothing deter me from stating plainly my convictions founded on six years' experience, much of the time in the native lands of these races, and an extended correspondence which gives me the views of a large number of skilful bee-masters residing in every country into which these races have been introduced. And this conviction is, that Syrian and Palestine bees, though they will continue to be cultivated, some have had their best day, while the star of the Cyprians is in the ascendancy. That it will remain when it has reached its zenith I fully believe, for the statement of Chancellor Cori of Bohemia, the discoverer of Cyprian bees, is as true to-day as twelve years ago: The race of the Island of Cyprus is the noblest and most valuable of all bees which up to this time have become publicly known.—F. Benton (*Bees*).

JAMAICA.

Bee-keeping in Jamaica is carried on in a very primitive fashion. Wax is more sought after than honey, and large quantities of it are shipped to England. Numbers of bees are kept by the black people. I visited one apiary, owned by a 'black,' and spent some time examining his bees. The apiary was situated among the mountains about 2300 feet above the sea. His hives consisted of soap-boxes, turned upside down and resting on four stones, one at each corner. These stones raised the hive four or five inches off the ground, leaving the bottom of the hive entirely open, and in some cases the combs were hanging below the bottoms of the hives and almost touching the ground. One part of each hive would be filled with cobwebs, &c., and the other part occupied by the bees. To get the bees out of the hive when taking the wax and honey, he kindled a little fire near the hive, allowing the smoke to ascend into the hive until the bees were quieted, when he shook them on the ground and placed another box over them. He extracted the honey from the combs by cutting them up fine and straining. There are not many Italians kept in the island, most of the bees being blacks. The people are beginning to use the frame-hives, but most prefer the box hives. The yield of honey per hive is not as great as might be expected. The blossoms of the logwood, acacia, and other trees yield considerable honey. The honey is mostly of good quality, but some kinds are dark-coloured and bitter. The season for honey gathering is almost the reverse of what it is in Canada. The bees suffer a good deal from drought at times, but I am told the Italians are less affected by it than the blacks.

The wax-moth is very troublesome. The red ants are also a great pest to the bee-keeper, entering the hives, destroying the bees, and devouring the honey. In some places the hives are placed on stands about four feet high, with the legs standing in pans of water, so as to keep off the ants. Frogs and birds also destroy large numbers of bees, and a great many are drowned in the molasses troughs in times of drought. The swarms that go off to the woods, and there are many of them, sometimes build their combs beneath the horizontal branches of trees, much like the *Apis dorsata* is said to do.—A. E. Gilpin (*Canadian Bee Journal*).

NEW ZEALAND.

Amongst the several rural industries now being carried on at Matamata, there is none more generally interesting to visitors than that of apiculture. Bee-farming has now become an established industry in England, America, on the Continent of Europe, and in Australasia; and deservedly so, for very few industries connected with rural pursuits have made greater progress during the last few years, or shown better results when systematically carried out. The importance of apiculture as an industry attracted the attention of Mr. J. C. Firth, who, with his characteristic enterprise, started the nucleus of a bee-farm some three and a half years ago, with Mr. Hopkins, the well-known apiarist, as manager. The result has proved the good judgment of Mr. Firth, for instead of the whole of the honey that is secreted in the clover blossom now 'wasting its sweetness on the desert air,' as formerly, many tons are annually harvested, which find a ready market at a remunerative price. There is one thing worthy of mention, viz., the honey produced at Matamata is without doubt equal to the best produced in any part of the world.

Connected with the management of the apiaries, of which there are two at present, there are two substantial buildings—one containing a large workshop, in which the hives, frames, and other appliances are made, a honey-room for storage of honey, a fumigating room, and an office. The first thing that attracted our attention on entering was the large stacks of 2-lb. tins of honey, nearly 10,000. These had been brought from the principal apiary, and were ready for soldering, preparatory to being labelled and cased for market. At the time of our visit the season's crop of honey was nearly all in, and this will amount to about ten tons—the product of 200 hives—an average of 100 lbs. per hive. In the fumigating room, which for the nonce had been turned into a wine room, we were shown a number of casks containing fruit wines, mead, cider, and vinegar, in a state of preparation. These had been made principally with honey, and gave promise of turning out excellent in quality. The honey used in their manufacture had all been obtained by washing the cappings of the combs; the portion shaved off before extracting the honey from them, and which is useless for market.

Mr. Hopkins, the manager, is of the opinion that were mead, honey, and fruit wines, honey-vinegar, and other such-like products obtainable, an immense demand would soon spring up for them. We have no doubt that this might be made a very profitable branch of bee-keeping if bee-keepers would but turn their attention to it. It would not only be the means of utilising a vast amount of surplus honey, but a great benefit would be conferred on humanity by placing within reach some wholesome, health-giving beverages in the place of the vile compounds now sometimes sold as wines. There is no reason why we should not again revive some of those ancient beverages, such as mead and metheglin.

The other building is used for manufacturing comb-foundation. Four of the latest and most improved machines for making it are in use at Matamata, and, in fact, everything that can be devised for purifying the wax and manufacturing a first-class article.

The Home Apiary, situated near to the manager's house, is a small one of about thirty colonies, principally devoted to queen-rearing. Here we saw a large number of miniature or nucleus hives, in which the young queens are reared and kept until they are required. Until quite lately none but pure Italian bees were kept and bred in this apiary, but in December last pure Cyprian queens were imported. These for the time were located here for the purpose of having the young queens reared from them mated by Italian drones, as the progeny from this cross are now considered to be the best working bees cultivated.

The 'Burwood Apiary,' situated some two and a half miles from the 'Home Apiary,' is devoted to honey production. The hives, about 200 in number, are in long rows in an enclosure of about an acre, surrounded by pine-trees, and are well sheltered. The extracting house, where the honey is extracted from the combs, stands nearly in the centre of the apiary. At the time of our visit extracting was going on. From the extractor, which stands on a platform about 4 ft. above the floor, the honey runs into a triple strainer, and from there into the honey-tank, capable of holding 3000 lbs. Here it is allowed to remain for a day or two to get thoroughly ripe, when it is skimmed and run off into tins for market.

One peculiarity about the Matamata honey is its rapid granulation and very fine grain. In the hottest weather it granulates in about three days from the time it is extracted, and in more than one instance this season it would not run from the tank thirty-six hours after being taken from the comb. When placed in a dish on the table its colour and grain give it the appearance of butter, from which it is sometimes difficult to distinguish it.

Mr. Hopkins informed us that the past season has been a fair one throughout New Zealand for bee-keepers, and that he estimates the season's crop at over 300 tons for this colony. He thinks the Auckland province alone will have produced nearly one-half of that quantity. Altogether we look upon the industry of apiculture as one of much importance to the State, and well worthy of any direct encouragement the State can give it. We congratulate Mr. Firth on his enterprise, and the example he has set to other colonists to 'go and do likewise.'—*New Zealand Herald, March* 6, 1886.

Selected Query.

[381.]—*Are queens reared in full colonies under the natural swarming impulse better than those raised artificially either on the nucleus system or otherwise? and, if so, in what points or qualities are they superior?*

By taking care that no queens are raised from larvæ not older than one day from the egg; there is no difference to be observed either as to longevity or prolificness, provided also that plenty of young bees are present to act as nurses. Queens raised carelessly, or from larvæ several days old, almost invariably run out during the spring of their second year—really before they are twelve months old.—S. Simmins.

I consider naturally-raised queens superior to those artificially reared in nuclei; a queen raised in a full colony by natural impulse would be more prolific, more robust, and her progeny would inherit her superior qualities and prove more industrious.—W. Woodley.

I always raise my royal cells from eggs laid by my best selected queen in a very strong colony, and by this means I keep improving my splendid strain of Ligurian bees. When they are about a day from hatching, I cut out each royal cell separately, and insert it into another comb, and put it into an empty hive, which is placed on the stand of the stock from which I want to take a swarm, the old stock being removed to a new situation. In about two hours in one morning I have made fourteen swarms. In that case, the bees raised seventeen royal cells on one comb. Fourteen of them I was able to cut out separately to make the swarms, and each of them had their queen hatched in about twenty-four hours, and all did well. The other three royal cells I destroyed, as they were attached to the others. I never raise queens in *weak nucleus hives*, as I believe the greater amount of heat in a strong colony produces stronger, finer, and more prolific queens.—W. Carr.

I have always found queens raised under the natural swarming impulse, in large colonies—*matribus paribus*—superior to those raised in nuclei, or by other means (and *by far* superior to imported ones), especially in longevity, fecundity, and general hardiness of constitution. This is my chief reason for preferring natural to artificial swarming, even where frame-hives are used, and for practising the so-called 'Heddon method of preventing after-swarms,' lately described in 'Useful Hints.'—George Raynor.

Queens reared after natural swarming are invariably better than those reared at any other time or in any other way. May and June are the months in which *natural swarming* takes place; the colonies are in a healthy and vigorous condition, they then consist of a large population of young bees, have thoroughly recovered from their long confinement during the winter months, and plenty of honey is coming in. All the conditions are most suitable for queens having the strongest constitutions being reared, according to the natural instincts of the bees. Queens raised in the strongest and most populous colonies are always the best and the most prolific. Queens reared artificially either early or late in the winter are much more delicate, and frequently die the first winter.—John M. Hooker.

I look forward to the replies to this question with interest, as I am unable to say whether those queens reared under the swarming impulse are better than those reared by the ordinary, or what I believe is generally known as the Cowan method. For the past three seasons I have worked colonies headed by queens reared by the above methods side by side, but there has been no perceptible difference in the results.—C. N. White.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

REVERSIBLE FRAMES. [367.]

[382.] When reading the article of Mr. E. Pond, of Foxboro, Norfolk Co., Mass., U. S. A. (who, I believe, is a lawyer), it occurred to me that I had before read an article of his on the same subject, and on looking over the American papers, I found one which differs in a marked degree with that above referred to. In the *Kansas Bee Paper* for July, p. 105, he writes:—'The question of reversible frames is one of no little importance; that is to say, the results said to be produced by reversing are exceedingly advantageous. The experience of all bee-keepers is that the lower part of frames are never so well filled out as the upper; reversing is said to overcome this entirely. We, however, look for far greater results therefrom. Our experience is that, when we get the brood placed to the top bars of the frames, the bees will at once begin work in the sections. In order to accomplish this in days past, we have been obliged to make use of the extractor, which causes considerable hard labour at a time when we are busy otherwise. Now, it seems we can accomplish this result simply and easily; all we need do is to reverse the frames at the time we put on the sections. The bees will rear brood close up to the top bars, and at once proceed to fill the sections. If any trouble is feared from the queen going into the sections also, it can be easily remedied by using the perforated zinc honey-board between the frames and the sections. We experienced somewhat last season in this matter, and with good results. We are again experimenting this season on this point, and so far it has proved a success. Many plans of making reversible frames have been given to the public, but the simplest one we know of is to make frames with a projection only at one end of bottom bar. The frames can be used in any hive, by simply putting a strip of tin or sheet-iron across the bottom of the hive, for the projection of the bottom bar to rest on. Then, when desired, the frame can be turned over, without trouble or change of the hive.' On the method proposed to be adopted by Mr. Pond I should like to make a few comments on a future occasion.—JOHN M. HOOKER.

REVERSIBLE FRAMES.

[383.] In your American correspondent, J. E. Pond (367) we have another illustration of that class of genius which knows without observation and understands without experience. He says, '*I do know* that the theory on which reversibility is based is wholly unscientific, and that the results claimed for it can be far more easily and cheaply obtained and with far less labour and trouble.' As one who approves of reversing, allow me to take up his arguments and conclusions in your valuable *Journal*. Let me—

> 'Take them up tenderly,
> Touch them with care;
> Fashioned so slenderly,
> False as they're fair.'

Although he is good enough to tell us he does know all about them, he does not even intimate that he has ever had a reversible frame, or even seen one; neither does he record the experience of any one else. This reduces very considerably the value of his statements. I do not know whether we shall agree as to the meaning of the word scientific, but I take it to apply to knowledge—not opinion—derived, *ex posteriori*, from observation or experience. In this sense reversing is scientific, as subsequent statements will show. He says, reversing, if practicable, is clumsy, and difficult, and expensive. This shows again his want of knowledge. We have amongst us reversible frames which are easier to work and less clumsy than any ordinary frame I have seen, while their cost is no more, and they abundantly repay if only for the purpose of getting the comb attached to each side of the frame, thereby increasing the breeding space and preventing breakage. Again, he says, 'It is a conceded fact that bees dislike storing honey in cells that are not deeper than those in brood combs.' This is an assumption. Unquestionably bees as a rule store their honey in deep cells, probably because they are able to store a greater quantity, but there is not an atom of proof that bees dislike storing in brood-cells on account of their depth or shallowness as he intimates. There may be a score of reasons given why they do not as a rule store in brood-cells, but the best I can think of is because they reserve them for the use of the queen and propagation of species. Everyone with experience knows that they will store in brood-cells when the others are filled without exhibiting any dislike. Then he gives us his superior method, which, I venture to say, no one in this country will fully approve. 'In early spring,' he says, 'when I make my *first examination*, I shave *all* the combs to just $\frac{7}{8}$ of an inch thick, and then replace them just bee-space apart.' I wonder how many stocks he has? How the bees must gorge on that day! What excitement! Just bee-space apart, so that the bees, fanning in their glory at the discovery of so much food, can fetch it from the cells behind with their wings while they can suck it in from with their tongues! Bees are said to be gluttonous, and to imbibe sufficient for three days; I should say most of these never want again. What inducement to robbing too, just at the beginning of the season, that is, for those that are able to fly. But there, they do all things big in America, and cutting combs, it seems, is not exempt.

He calls his method, in contrast with reversing, labour-saving. In autumn he puts combs wide apart, so that bees shall build thick combs to store food, and for him to shave it down again on that auspicious spring day—how the bees must look forward to it!—the opening honey-glut. I may be wrong, but I make a practice of getting as little comb as possible to shave off in the spring, and I thought I was sparing of labour both for my bees and myself. At the conclusion he becomes highly philanthropic towards the bee-keeping world, and indignant towards those who reverse their combs. He says, 'I give this information wholly in the interest of bee-keepers the world over, and desire to have the matter fully tested by every bee-keeper in the civilised world. Where there is so much assumption'—save the mark—'I desire to do what little I can to enable the brotherhood to work in accordance with law, and at the least possible expense and trouble.' We shall all agree to have the matter fully tested, and hope that before Mr. Pond writes again he will try a few reversible frames of a simple character. He will not then, perhaps, be disposed to denounce that as assumption in those who differ from him when they have proved it by practical experience.

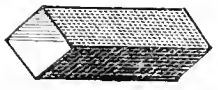
It is a common practice for some bee-keepers to argue that reversing is unscientific and unnatural. We were told by one correspondent, who was anxious to have no further discussion, that after a time we might turn our

houses upside down, which I should not object to if I thought it would improve my circumstances or increase my income. There's the rub. We say that reversing does increase the income of the bees, and that it is scientific. Bees and their hives are capable of improvement. We try to understand their habits, and under what conditions they will work best, and we employ that scientific knowledge to practical purposes. Reversing frames is never, as far as I have read, seen, or heard, objected to by the bees, while it puts them in a condition of securing a larger harvest in supers with more certainty than any other system, and by keeping the combs fairly clear of honey it promotes breeding—the very objects bees most desire. I know that putting frames close, as advocated by our able Editor and others, is a good plan, but I have tried both, and can unhesitatingly say that reversing is easiest and most certain of results. However close the frames may be, the bees will store honey in them if they do not like the supers. I have found it so, and even uncapping did not make them carry it above, but I have never found a failure with reversing. Reversing is no more unscientific than any other plan. It proceeds upon well-known lines, and is the system which takes most advantage of the natural habits of the bee.—J. Rudge, *Bee Hive, Dursley.*

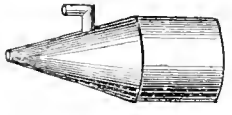
FUMIGATORS.

[384.] No doubt many bee-keepers would try the effect of carbolic acid fumes if they could do so without having to use a special appliance for the purpose. The following simple additions to the ordinary smoker will enable it to be used equally well for both purposes.

Procure a piece of perforated zinc and bend it into a square tube, thus—



of the right size to fit the inside of smoker barrel; into this squeeze the piece of sponge that is to hold the acid; this will hold the sponge in its place and allow a free current of air all round it. Now fix a small elbow-pipe on the chimney of smoker, thus—and plug the nozzle of chimney. When required as a smoker, the plug must be taken out of nozzle and put in elbow-pipe. Any acid escaping from sponge will run down into nozzle, where the plug will prevent it from running into the hive. Any tinman will make this alteration for a trifle, or a handy man could do it for himself.—W. H. Dolan, *Loose, Maidstone.*



A BAD START.

[385.] I have read somewhere that young bee-keepers generally learn something never to be forgotten on their first trip to the heather with their bees. Well, what I am going to relate did not happen on my first trip, but I was only a novice till it did happen. I had three hives out of my stock which were very strong and good, and I thought that I would take them to the heather in the gig and leave the others to follow in a cart. We had only about six miles to take them. At six o'clock in the morning my brother Willie and I got the pony into the trap and then commenced to load up. The first hive was a bar-frame. We got it safely into the gig, ditto with the second, which was a Stewarton, with three body boxes and two tops. The third and last that I was going to take was also a Stewarton, when I lifted it into the trap the pony began to get impatient and restive. The very thought of what followed makes me shiver. Well, when I had got the last hive in and was moving it about to get it to rest firmly, what did that awful pony do but start violently forward, and over I went and the Stewarton with me, right over the back of the gig! The hive broke of course, and the bees got out, and stung, equally of course. My brother, who was trying to hold the pony, got stung, then the pony was stung about the head, and he bolted down the avenue. I got up, leaving the hive lying as it was, and ran down after the pony, who had caught the wheel of the gig into the gate, and, feeling himself held, was kicking like mad. I got round in front and got hold of the brute by the head, just as the other Stewarton was flying over the back all in pieces. I had scarcely got hold of the rein before the pony hit out with its fore feet and laid me on the flat of my back. Fortunately I was knocked a little to one side or I would not be here now. Just as he got rid of me he managed to break the cast-metal pillar, and away into a grass field he went in fine style. He did not go far, however, before he wheeled sharp to the right and sent the bar-frame hive over the side. A little further and he again turned to the right, with which turn the gig turned completely upside down. Somehow the pony got the traces clear, but the reins having been fastened to the lamp-holder the poor brute came back over the track that he went, pulling the gig upside down by the reins. When he got to the place where he threw out the bar-frame hive I caught him, and my brother coming to my assistance, we got the pony loose somehow; the bees were stinging too badly all the time for me to tell how we did exactly. My brother took the pony away to the stable, and after some of the farm-men had the harness taken off, put him into a loose box, where the poor brute had to be nursed for many a day. Almost all the stings that the pony got festered, and the hair came off in patches round the stings. Three months after I counted 250 sting-marks on one side, and the worst places were a trifle too thick to be counted, the mane especially. When I went into the house my sister took a table-knife and actually shaved the stings from my face, and my brother was almost as bad. I would rather not mention what I suffered from them, but will say this, that I scarcely feel stings now.

Of course the wise ones say that I should have done this or that and prevented such a smash-up. I can assure all such that I know better now than to load a cart with hives when the horse is in the shafts. The worst of it is that if I so much as mention the profits of bee-keeping I am always told to remember the pony. Perhaps some will ask what became of the hives, so I will tell what I did. As soon as I could see a little I gathered the combs, or what was left of them, and after turning the Stewarton upside down, and fixed the combs upright with corks and bits of stick, put them on their old stands and left them so. Out of ten combs in the bar-frame seven were not very much damaged, but the bees were—I don't know where. I got a queen some days afterwards surrounded by a few bees in the grass field, but the other two queens were lost. This is all fact, and if it make some bee-keepers a little more careful I will be pleased. I daren't put my name to the end of this, and, Mr. Editor, I hope you will never tell it. I am bad enough plagued already without being hung up in the papers.—G. D. C.

LARGE-SIZED WORKER CELLS.

[386.] In thanking you for your kind reply in answer to my inquiry (359) I cannot exactly make it out, as the comb in question which worked out drone-cells is identically the same pattern I used the whole of the last season, and the early part of this too, and I had good patches of brood hatched out producing fine large worker-bees, and not a single drone until about the middle of April. Why did not the queen drop drone-eggs into these cells? or the bees work out drone-cells for their reception?

I suppose the cells are of such a size to admit of their utilising them to either.

Acting on your advice, given some few weeks ago in the *B. B. J.*, I discontinued the use of distance-pins and reduced somewhat the size $1\frac{5}{16}$ in. between the frames. I think this will have the desired effect.—J. J. CHINNICK.

[Some years ago, when experiments were being made to produce a larger-sized worker-bee by some bee-keepers, Mr. J. M. Hooker imported from America a machine for making the larger-sized worker-cells; the first year, to some extent, he succeeded: worker-bees were produced; the second year there were large patches of drone-brood, and discovering that no dependence could be placed on the ovipositing of the queen, he has discarded the use of the machine. We are of opinion that your experiments will not result in success, that you will not be able to lead Nature out of her ordinary lines, and that you will agree with Messrs. Abbott that such cells should be utilised only for the production of honey to be extracted. —ED.]

THE SMALL TIT AND THE BEES.

[387.] I have so often pleaded for my little friend—that sprightly little bunch of feathers—the tom-tit (Cœruleus Parus minor), and that, as he is not yet acquitted, I feel sure you will add this as still further evidence of his innocence. I placed in the winter time a number of boxes made in such a way that I could open and inspect them, and placed them in various positions in my garden. Only one of these, unfortunately, has been tenanted, but a numerous and evidently voracious family is being brought up in this my *observatory birds' nest*. Sir, not a bee do they even touch, though my hives are not twenty yards from them, and the parent birds visit their nest some hundreds of times a-day. My apiary is at the bottom of a walled garden, and having an arbour at one corner of it where I can view all my colonies, and sitting there as I do sometimes for an hour or more at a time reading or writing, I have a splendid opportunity of watching not only the friends, but the enemies and molesters of my bees. My little tit *is* innocent! Would that the voice of all bee-keepers would pronounce the verdict 'Not Guilty!' —ALFRED E. BOOKER HILL, *The Chase, King's Lynn.*

CAN WE MAKE THE BEE-TENT MORE ATTRACTIVE TO THE PUBLIC?

[388.] Looking over the reports of the various County Associations, one can but notice that, generally speaking, there is a deficiency in receipts of County Shows and bee-tents year by year. Now, to recover lost ground, and to make shows more serviceable, should be the aim of every one. I think the day of large takings to witness driving is gone for ever; in fact, almost everybody knows how to drive. This cannot be said of general manipulation with frame-hives. We have lingered too long in Standard l. How few of us know anything about queen-rearing, introducing, &c.! I am not ashamed to own that I often have failed to get first-class queens. I take it as a test of competency if a person, cottager or otherwise, can rear good queens. Certainly, County Associations and organizers of shows would do well to give more attention to instructing their members in this most important branch of apiculture. This might be attained by getting up a *conversazione* in the bee-tent amongst those proficient in the art in its various systems —illustrated by the expert with a stock in frame-hive. I would venture to say this would prove more agreeable to expert and audience than the ordinary driving and transferring, with its accompanying robbing and stinging. I have a lively recollection of such a scene,—and guess our expert has, too. The Observatory hive has been a great source of attraction to the general public, and always will be; but it might be made more instructive to modern bee-keeper if some of our queen-rearers would send a frame of sealed or hatching queen-cells; with ease they might arrange them to hatch during the show. By this means, we should acquire an insight into the system adopted by English queen-rearers. Thanks to Mr. Blow, we have learned something as to the mode adopted on the Continent. With my very limited experience, I could not see, till he gave us the information, how queens could be sold for the money at which they were offered by dealers. Our great want is better, not cheaper, queens.—PLATELAYER.

PEA-FLOUR.—[374.]

[389.] If 'Irish Novice's' bees don't like pea-flour, they are quite right in refusing to take it. I can't think that the crocus flowers like it any better. If the older Darwin's theory be true, the crocuses also must be disgusted by being spoon-fed. 'Irish Novice,' perchance, has lots of natural pollen in his neighbourhood. I have not. Hence the 'different tastes' he speaks of.—J. LAWSON SISSON.

HOW TO MAKE A CHEAP AND SIMPLE ¼ CWT MARKET PACKING-CRATE FOR 4″ × 4½″ SECTIONS.

[390.] Take a $\frac{1}{2}$″ × 9″ board, cut four lengths $13\frac{3}{4}$″, and three lengths 10″ (or better, cut two lengths $13\frac{3}{4}$″, two $14\frac{3}{4}$″, two 9″, and one 10″). Cut one 10″ length into four strips, nail these latter on to each end of the $13\frac{3}{4}$″ boards in such a manner as to overlap the ends $\frac{1}{2}$″ all round. These are the top and bottom boards. Now these four boards, with the two 10″ (or 9″, as case may be), will be found to cover the twenty-eight sections exactly. All that has now to be done is to nail the bottom sides and ends together, and to screw the top. The cost for making one dozen of these crates is as follows—of course bee-keepers must not put time into consideration:—

	s.	d.
15 feet 9″ × 3″ plank at 3*d.* per foot	3	9
Sawing same (five cuts)	2	0
1 gross 1¼″ thin screws...	0	10
1 lb. nails (say 1½″ blue ovals)	0	5
	7	0

In the above cost I have allowed for a 10″ × 3″ plank, which can be cut down to 9″ full. The width of sections varies. I have some in which seven placed side by side only make $13\frac{1}{4}$″.—A. T. WILMOT.

THE IDLE MAN AND THE BUSY BEE.

Hast thou ever stood,
In the glowing month of June,
Under the garden wall,
Or the pleasant shade of the trees,
In an idle and listless mood,
Watching the 'blessed bees.'
Marking the outward dart,
The hastily plumed wing,
The eager sudden start,
The labour'd home-coming?

Hast thou ever leant,
Lazily over a hive,
Head prone and elbows bent,
Watching the toilers go and come,
All the ambient air alive
With a musical low-pitched hum.
Seen the o'erladen bee,
Panting for very breath,
Working so merrily,
Yet working *to the death?*

Hast thou ever quaffed
The rich ambrosial scent,
From the gather'd store within,
(By some light zephyr waft),
Speaking to your rapt sense
Of the harvest you hope to win,
Of sections pile on pile,
Extracted *mel* to boot,
A ready sale the while,
Crowning the splendid loot?

Once on a time *I* dreamt
Such a midsummer-day's dream
(Nor sleeping, nor quite awake,
But absorbed in reverie),
As I stood or idly leant
On the verge of the living stream,
When, sudden as lightning's flash
From a thunder-clouded sky,
An angry bee made a dash,
And stung me under the eye!

It hurt me I must confess,
It scattered my pleasant dream,
I felt less inclined to bless,
And thought on a different theme;
Remembered a parallel
In the words of Holy Writ,
One sent to the ant—well, well—
And the cap seem'd made to fit!

W. H., *Dorking.*

MORAL.

Don't trifle with time, but render
Due homage to industry, friend;
And though honey is sweet, remember,
Every bee has its bitter end!

BEE-STINGS.—As so much has been written in your valuable *Journal* about bee-stings, perhaps it might interest some of the readers to hear my experience. In the autumn of last year I purchased three stocks, viz., black, hybrid, and Ligurians. I had several stings from the black and hybrids in clearing the entrances of the hives in October, but they were nothing more in the way of pain or swelling than gnat-bites, so I congratulated myself that I was going to have no difficulty with bees on that score, so employed myself during the winter making hives, frames, &c., also telling my friends that bee-stings had no effect on me. But, alas! in April I had quite a different story to tell. In examining for queens (though I did it very gently, and killed no bees), two or three stung me on the hands. The pain was nothing at the time, but the next day my hands looked like boxing-gloves, and I could not use them, so I began to think of wearing gloves for manipulating, but did not like the idea, as I hate gloves at all times. In the first week of May, when spreading brood, I had several more stings, which swelled up very rapidly, and for two days I had to stop doing anything. So I started gloves, a pair of white kid, and over them thin woollen gloves, with the points of the fore-finger and thumb cut off the latter, so as to be able to pick the frames up easily; but the bees were determined to be even with me, and as I was watching them a day or two ago one fellow came straight at me, a hybrid. I kept quite quiet, having read that that was the right thing to do. But no, he was intent on stinging, first in my whiskers, then on my neck, and not liking these parts, darted into my ear. Even that he did not care about, so tried my nose, and was entering; but I really thought that too great a liberty, so put my hand up, and my friend stung me on the end of my nose. I put some ammonia on it, but it was no use, and in a couple of hours I had a bottle nose and one black eye. Now why did that bee sting me? We read that they only sting in self-defence. I had never offended it in any way; in fact, I do not think I had ever seen it before till I was brutally assaulted. Somehow I cannot believe in the inoculation theory. People first going to India suffer terribly from mosquitoes, but after a time their blood becomes poor, and the insects cause but little inconvenience. Possibly if I continue to keep bees till I become an old man, my blood may become thin, and the bee-stings have no disagreeable effect.—A BEE SERVANT.

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

Requeening Stocks in a small Non-swarming Apiary.—1. With reference to a recent query in the *British Bee Journal* asking for advice with respect to requeening stocks in a small non-swarming apiary, where it is not worth maintaining nuclei, I would suggest that the old queens are dethroned about five weeks before the drones are expelled; by this means you have brood-rearing to occupy the bees when honey gathering is at its height—a supposed advantage—and the queen, by a little judicious feeding, will settle down to her maternal duties before winter sets in. Observatory hives are interesting, and are at the same time most useful in small apiaries for replenishing queens.

2. For 'fixing foundation' Abbott's new arrangement for frames is excellent—foundation is inserted with the utmost ease and with great security.

3. I believe I was one of the first to use carbolic. I also would give a warning to those who use it. I well remember losing a fine swarm (when being thrown into a frame-hive) under the influence of this intimidant. The bees became so scared that they took wing and decamped. I do not wish in any way to depreciate the value of carbolic, which is most useful if applied with care.—G. H. G.

[362.] *Doubling.* (Novice.)—The best shape for doubling is a square hive, with one or two upper parts that are thoroughly interchangeable. It is for extracted honey that bees are worked in this method, and it is very rarely the queen ascends any of the upper frames, finding nine or ten sufficient for breeding in. I never use any excluder as some recommend, and have taken a cwt. of honey from one hive by this method, which gives, I think, a fair average: you would get twenty frames for slinging with two upper tiers, the remaining ten in body-hive being left the bees for wintering in.—G. H. G.

[364 and 365.] *Supers and Extracting.* (Rare Sips.)—If a good season, you might possibly get sections worked between top of frames and your 'Woodbury' super; but you must remember that the bees will give you better results in weight by your extracting than in comb honey. You could with advantage in a long combination hive get both, by working with about twenty-four frames, and super to cover about ten, and extracting remainder; but I am afraid we shall not get so good results this season as all would wish, both in quality and quantity of honey.—G. H. G.

[370.] I have been spending a good deal of my spare me this week in watching the bees (common blacks) at work on ordinary garden broad beans. Up to this afternoon I have not been able to catch one actually piercing the base of the flower, but a few minutes ago I saw the whole operation. The flower was certainly unpierced before, for I examined it and watched it until a bee settled and with a sort of screwing motion inserted its proboscis. The bees also gather a very dark-coloured and waxy-looking pollen in considerable quantities.—T. S.

[378.] *Driving.* (Cordwainer.)—The quickest method of driving bees is by the method called 'bumping.' After frightening the bees and removing any sticks that may be placed across the hive, give it a sharp bump on the ground in order to break the attachments of the combs, then remove the combs one by one, brushing the bees back into the hive, after placing the hive on its original stand, to collect the flying bees. When they have settled down they can be removed. You can manage about six or eight hives in an hour or less.—W. B. WEBSTER.

[378.] *Driving.* (Cordwainer.)—This querist's experience is what usually occurs when driving bees from skeps; it is very rarely indeed that every bee will leave the hive, but a few are usually found on the combs, which cause no trouble

as when the combs are taken out they are easily swept off. I hardly understand the latter part of his query, '*When I have turned the hives up to take the combs out*,' as in driving the bees from a skep, they should always be driven in an inverted position, though I have heard of bees being driven through the hole at top of skep when they were in flat-topped skeps, and if 'Cordwainer' did this, no wonder at so many bees being found on combs, they being so much less inclined to move than when hive is upside down, and a lot more rapping is required.—G. H. G.

[379.] (Irish Novice.)—The simplest plan is by removing mother bee from one hive, you will then have, say, seven or eight cells formed. When nearly ripe, remove mother bees from the other hives, and about twelve hours after introduce cell to each. Reserve a couple in first hive in case of mishap.—W. B. Webster.

[379.] *Raising Queens to supersede old ones.*— (Irish Novice.) Insert comb or sheet of foundation (comb is best) into centre of your selected stock. In two days examine it for eggs. If found, brush off adhering bees, put it in company with three or four empty combs into new hive in position of some other stock, which need not be the best you have.—Platelayer.

[379.] *Raising Queens.* (Irish Novice.)—Bees usually raise at least four queen-cells; I have found as many as twenty-seven in a hive, and for re-queening I always rear them from a hive having a prolific queen and whose bees are strong in numbers and good workers. Make an artificial swarm, and some fifteen days afterwards cut out the queen-cells you require and insert in combs of hive you wish to re-queen. I generally insert two cells for any fear of accident to one.—G. H. G.

[380.] *Figwort* (*Scrophularia nodosa.*)—The last time I saw figwort was in the garden of a well-known bee-keeper. He had taken great pains with its cultivation; but it had been a complete failure. It possessed no attractions for his bees. It, however, bore evidence of having received the attentions of all the insects in his garden; the whole of the soft portions of the leaves had been eaten away, and it presented as perfect a specimen of the skeletonization of a plant as I ever witnessed. Wasps are said to be very partial to it. The *S. nodosa* (the noted Simpson plant) should not be confounded with the *S. aquatica* which is to be found in the neighbourhood of moist places and streams. —Melissa.

[380.] *Figwort.* (J. P. Smyth.)—I have confidence in stating that this plant is one of the best honey-yielding plants growing wild in this country. A great quantity of the 'Water-Figwort' grows wild about here, and the small brown flowers are thronged with bees, even when white clover and limes are in their prime.—M. J. Astle.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[391.] *Removing Wax.*—What is the best method of removing the small particles of wax, &c., from extracted honey?—Edward J. Gibbins.

[392.] *Anglo-Carniolan Bees.*—Are bees that are the progeny of a Carniolan queen and an English drone as gentle and easy to manipulate as pure Carniolans or pure Ligurians? or do they resemble the Anglo-Ligurian cross in temper?—Dar.

[393.] *Turning Drones Out.*—On Sunday, June 6th, the drones were being turned out of one of my hives; what was the reason?—Blanche.

Echoes from the Hives.

Plymstock.—There are no signs of white clover blossom yet, but the leaves are well up. Very few swarms have yet come off; I have only heard of three, viz., two on the 23rd, and one on the 30th of last month. There is hardly a bar-frame to be seen here, all skeps, but I am trying to induce a trial of modern methods.—Trevor Saynor.

Somerton, Somerset.—Weather wet and cold up to Saturday, when we had a hailstorm. Sunday beautiful warm day, summer in fact; but Monday and Tuesday is February and March again, with cold and rain.—J. I. S.

Bromsgrove, Worcestershire, June 1.—Sunday last, May 30th, only good day we have had for a fortnight. At time of writing a steady downpour. Most disheartening to bee-keepers in this district.—G. H. G.

Holme, June 3.—Weather in this district far from be(e)ing as one would wish. The continued unseasonable time and strain of willing to work in any weather has cleared all old bee life from my apiary. Now the baby bees are depending solely upon stores given either as syrup-filled combs, or in feeders, the former being most effectual where old stores are entirely cleared out. My thermometer giving me but little comfort for the future, I have almost decided to place it out of sight. Many distressing inquiries I receive from far and near. Hope still bids 'Be of good cheer.' Feed! feed! feed! Then when the honey morn does break, how surprised shall we be at labour done ere it closes, and after all be rewarded for our care and attention.—J. H. H.

South Derbyshire, June 4.—After nearly a month of cold, showery weather, our hearts are gladdened by a splendid morning. I have a boy-sentinel perched on the rails enclosing my apiary watching for swarms in tremendous earnest. Have been feeding frame-hives right up to now to keep breeding going, which otherwise must have almost entirely stopped, for bees have gathered next to nothing since the beginning of May.—M. J. Astle.

Torquay, June 5th.—What weather we have had, scarcely a fine day for a fortnight! The last three days have been fine though, and the bees are taking in some honey. They got very little from the apple-blossom, which is now over. I have heard of several swarms here, and also of foul brood, which is about in several apiaries.—R. P. Kitson.

Bromsgrove, Worcestershire, June 6th.—The weather here seems to have improved for the better the last three days, and barometer has steadily risen. Bees are working like 'niggers,' but no honey coming in; pollen in abundance, frames full of brood and but just a shade of honey. The fruit blossoms are all over round here and nothing to signify for bee forage will be out for another week till the beans and they followed by the white clover. I have known of several swarms last two days, which their owners tell me are quite a month later than last year. I have found a case I *think* of foul brood brought on by chilled brood in a cottager's frame hive through *spreading the brood*, but will report further in a week or two.—G. H. G.

North Leicestershire, June 7th.—To-day is the fifth successive good day for bees, maple, apple, sycamore, mountain ash, rhubarb, broom, holly, hawthorn, and dandelion are each and all affording abundant supplies of nectar and pollen. The bees, however, are very backward, many stocks not so strong as they were in April. Uniting is being resorted to in order to bring the stocks up to the required strength for the main honey-flow from the white clover at the end of June and beginning of July.—E. B.

Larnaca, Cyprus.—The winter seems to have been severe all over Europe and in all Mediterranean countries. But while in more northern climates my bee-keeping friends write they were buried in snows, I was away off where the winds blow from Africa's Great Desert, and at the beginning of February was hiving swarms and extracting rosemary honey. Stocks that had not gotten short of stores during the months of December and January and were protected from rains so their hives were dry inside, were quite populous some of them occupying twenty-four frames, twelve to fifteen of them fairly filled with brood.

Feb. 15th, I counted eighteen frames of brood in one hive. Frames each having 120 square inches. Three hundred and fifty queen-cells, formed by a single stock preparing to swarm, were counted on twelve frames. Here in Cyprus the colonies are less advanced, for even Cyprians cannot get honey out of bare rocks and barren sands.—F. B.. (*Bees*).

Notes from the 'Bavarian Apiary.'—Last Sunday morning just after breakfast, when standing with our little son Ralph by the window to view with me the appearance of the weather, we were suddenly greeted by a bevy of sea-gulls which came flying merrily down the 'Schwabinger Bach,' while Ralph clapped his chubby hands and exclaimed at their beautiful appearance. I rejoiced in the thought, 'Now a storm, then fine weather, and our dear little bees will dare to peep out once more!' And so it has proven, Sunday and Monday we had a warm rain, melting away the snow and ice which had seemingly become fixtures to us. Tuesday the sun came out and with it myself and my bees. The little fellows seemed so glad to get out after a confinement of about five months with only one flight of about two hours one day during the last week of February; the next day, however, they were as suddenly frozen up as they had been thawed out the day before, and remained so for nearly three weeks. During the past week I have looked them all through, changed some over into new hives, &c., thinking to myself they were now ready for work. This morning while I sat writing, Zoë came running up from the garden, where she had been at play, exclaiming, 'Mama, the bees are having a fine time.' I dropped my pen, feeling a little like Mahala Chaddock, though 'that husband of mine' is not here to right up. Nor I haven't the conveniences from A. I. Root's five-cent counter upwards to cheer me on in my German house-keeping or bee-keeping either, still, I felt like Mrs. Chaddock in this point, things go wrong when I am not at every corner; and the bees were having a fine time,—not only our own, but our neighbours'. They had sought around and found in the store-room several hives of combs partially filled with honey which had been intended for spring feeding. And they had been fed, for they were nearly emptied of the several pounds of honey they had contained but yesterday. I called the servant, who came running from the wash-house in fear, but I assured her they would not sting when on such an expedition, and I must say she is a right brave old German woman or she would not have ventured; while there was no danger it is often hard to convince these stupid people of the same, but she came to help me, saying, '*So! ist es wahr! Stechen sie nicht?*' and with my again assuring her, she grew right brave and we soon had the wreck cleaned up and carried off to the attic, where what was left was safely deposited for future use. I found, also, upon closer examination, as the Germans say, they had been having '*An ächter Krieg*' with some of their neighbours, the Cyprians and Syrians proving, however, that they were ready to protect their precious stores let them be ever so little. All this was a new experience for me, and I began collecting my ideas together on what I had seen of late in the bee journals on this subject, but I only had very indefinite ideas on the subject, when all at once I remembered one point I had heard Mr. Benton speak of in case of robber bees, and that was closing the entrances partly up. This I did, and it had the desired effect. Our fine weather has continued up to date, and I have just finished filling early orders for Great Britain and I am beginning to think seriously about our friends over in America, but you know that long sea voyage makes me delay a little; I can feel for the little fellows in their sea-sickness on a stormy sea, and I dread starting them.—Mrs. Frank Benton, '*The Bavarian Apiary.*'

Bar-frame Wasp-nest.—A bee-keeper here has had an empty bar-frame hive standing between his other hives with the doorway turned opposite towards the wall, and the other day he saw a queen-wasp about this hive, but lost her. On opening the hive he found her nest nicely fastened to one of the empty bars in the hive, below the crate of sections, which were also on the hive. I took out the bars; there was a small cake with eight or nine cells, and the queen was busy at work inside.—J. I. S.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

P. G. Saunders.—*Andrena fulva.*—The bee forwarded is of the family of Andrenidæ: its specific name is *Andrena fulva* (for description of which see Vol. 13, p. 35). Its neighbourhood will not disturb your bees, and there is no possibility of your being able to turn them to any account. They, however, will prove an interesting study.

F. Hughes.—*Injured Queen.*—Queens should be perfect and without blemish. The loss of part of one leg would not diminish her ovipositing powers, and it might not seriously affect her movements over the comb. If you watch her progress during the season you will be able to discover whether the injured limb is any impediment in the performance of her duties.

M. C. H.—We believe that good foundation for supers can be obtained from those purveyors of bee-appliances who advertise in the columns of the *Journal*; and it would not become us to say that one produces better material than another. Kindly excuse us, therefore, for not giving a more direct reply to your question.

P.—*Removing Bees from a Wall.*—Unless you can get permission to remove more than two of the planks we do not think it possible to get the bees and combs. By smoking, or injecting carbolic acid vapour, you might be able to drive the bees out, and then with a long knife you might be able to detach and remove the combs, but, judging from your description and sketches, it is rather a hopeless operation.

E. C.—*Preventing Casts.*—You did wrong to cut out all the queen-cells. Unless you saw a queen you should have left one. Unless you have a spare queen, or another hive about to swarm from which you can give a ripe queen-cell, you had better unite the stock to another or to its swarm.

S. Richards.—References will be found in Vol. 13, pp. 213, 374; Vol. 12, p. 311, &c.

H. C. M. F.—*Stock Dwindling.*—1. The symptoms you describe point to an aged and worn-out queen. Hence the increasing number of drones and the decreasing number of workers. She has now died. The bees will no doubt raise a queen from the brood which you gave them, but, as this will take time, if you have another stock at swarming point, preserve a ripe queen-cell and give to the queenless lot. 2. Give only hatching-brood for strengthening, and not more often than, as bees hatch out, to cover the added frames. 3. Smoke in moderation is not detrimental to brood.

J. H.—We consider the subject mooted in your letter has been sufficiently ventilated.

M. T. K.—You will find in *Modern Bee-keeping*, and in Cowan's *Guide-book*, directions for feeding in spring and autumn, with recipes for the food then most proper to be given.

F. Cocks.—The sample of enamel cloth will be found suitable, but we prefer it not so smooth.

B. C.—The introduction of the spare queens to the queenless stocks will be a very proper mode of utilising them, and will be a great saving of precious time at this season.

Ignoramus.—*Bees Deserting their Hive.*—The presence of the wax-moth was not in such excess as to be the cause of the bees deserting their hives; it is rather to be attributed to the exhaustion of their stores and to their being in a state of starvation. During the past season there has been little opportunity for the bees of acquiring honey, and unless they have been continuously fed, there was great danger of their dwindling to the 'small flight' observed. There need be no apprehension of evil con-

sequences resulting from the introduction of the comb into other hives.

H. J. L.—1. *Braula cæca.*—From your description and drawing we have reason to believe that the insect you found was a *Braula cæca*, a bee parasite. These parasites frequently affect bees from Italy, Cyprus, and the East. They cling with great tenacity to the queens. In the south of Europe they are very troublesome, but in the northern part and in England they disappear, the climate not being favourable to them. 2. *Ants.*—These cluster under the quilt for the sake of warmth. If you pour some paraffin oil over the pathway of the ants you will get rid of them.

A Lady Novice.—*Ants.*—Please refer to reply to H. J. L. 2.

C. Widden.—*Bligh Competition.*—This was a most interesting experiment inaugurated by the Hon. and Rev. H. Bligh. Its object was to institute a comparison between the various hives and systems of bee-keeping, and the most economical mode of conducting them; and to show cottagers what may be done in bee-keeping, the operations were conducted in their gardens. Prizes were given to the most successful competitors. On the last occasion the first prize was gained by Mr. T. Owen, of Cosham, Wilts, who proved satisfactorily to the judges that, with the two pounds allowed as capital to start with, he had, during the allotted time, realised a profit of 14*l.* 3*s.* 2*d.* We cannot say whether there is any probability of the competition being repeated, but we hope it may.

J. P.—*Three Queens thrown out from swarm.*—These are young queens, and there is little doubt that another remains with the swarm, perhaps the old queen died or was lost and thus the young queens went out with it. The survivor would be unfertilised and would not lay for a few days. If, when you see this, there are still no eggs or brood you may conclude that she is lost. The same applies to the young queen remaining with the stock.

F. F. G.—1. *Uniting.*—This is as good a time as any, and when plenty of honey is coming in the operation is easy. Remove the queen you do not wish to preserve, open out the frames of the strong hive and place those of the other between them, a little smoke is all you require to quiet them. Unite in the middle of a fine day and place the united stock midway between the old positions. 2. *Changing hives.*—This is best done at midday.

Bailie.—1. *Sending bees from England to Scotland.*—Bees cannot be sent by parcel post. 2. *Feeding swarms in transit.*—If likely to be, as you say, six days on the road, a damp sponge should be securely tied in one corner of the box, and in another corner a muslin or canvas bag of Demerara sugar. 3. *Weak Stocks in Skeps.*—Transfer to a bar-frame hive and give the bees only those combs containing brood. Unite a swarm to them if you can get one and then give more combs according to the size of the swarm.

W. F Askew.—An answer to your question is given in 'Useful Hints.' As you make no mention of the distance apart of the two gardens, or of the one to which the bees are to be removed, we have supposed the latter to be at least a mile, but the operation would probably succeed at a much shorter distance.

B. C. W.—*Cowan Hive.*—You are mistaken in supposing the frames to be broad-shouldered. Novice's metal corners only are used, and it is specially stated (see page 34, and Fig. 16 of our *Guide-book*) that 'there are no distance-pins or broad shoulders.' When in position, the tops of the frames are 'flush' with the sides of the hive—an arrangement which is a *sine quâ non* in all doubling hives; and there can be no escape of heat when the hives are doubled.

P.—*Symptoms of Dysentery.*—When this disease exists, the combs and other parts of the inside of the hive are fouled with stains of a clayey appearance.

R. W.—*Camphor.*—You should tie the camphor in pieces of muslin, and place it in the corners of the hive. It will not cause the bees to leave the hive.

W. J. T.—*Foul Brood.*—The small piece of comb bears evidence that the hive from which it has been taken is affected with foul brood. We would suggest that you should at once try either the Phenol cure or the Bertrand fumigator.

South Devon.—1. Bertrand's fumigators are procurable from C. T. Overton, Crawley, Sussex. 2. The white matter has been smeared on the bee from some substance in the hive, but we are unable to say what that substance is. The bee itself appears afflicted with *Bacillus depilis.*

I am glad to see the first symptom of a bee journal at one penny. I myself could, I think, increase its sale in our small place by about eight or ten copies when it comes down. It is cheap enough at present, but is too much for each one to take alone, especially with two or three other papers as well. But let it come to a penny, and then the price will tempt instead of deterring them, and those who now club together outside the Associations will then take a copy each. I will put, say, what the effect of the changes in price and time of issue:—When the *Journal* was a monthly, ten of us took one copy. When it was a bi-monthly we continued thus, but as soon as it came to a weekly we took three copies; and when it comes to a penny paper I think we can all take one. I shall try hard to get them to do so.—J. Isherwood.

Received.—*Bee Pasturage.* By Henry Dobbie. This will be noticed next issue.

Received from Messrs. Joseph Dines & Sons (Maldon, Essex) their Catalogue of Improved Hives and Bee-keepers' Appliances (16 pp.)

From Mr. C. T. Overton, Lowfield Apiary, Crawley, Sussex, his Illustrated Catalogue and Price List of Improved Bee-hives and Apiarian Appliances (32 pp.)

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
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July 12-16. Bees, Hives, Honey, &c., Royal Agricultural Show, Norwich. Post Entries to June 1st. Secretary, J. Huckle, Kings Langley.

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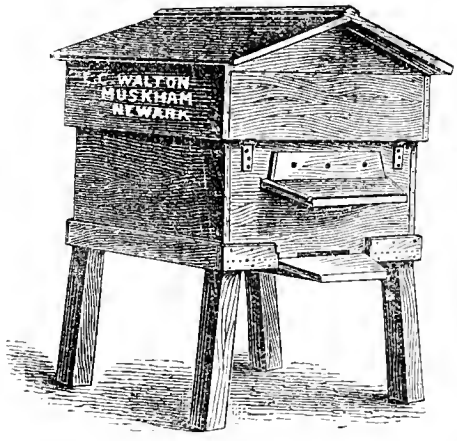

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THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

QUEEN-REARING.

One of the conditions required for successful bee-keeping is the possession of strong colonies, and this can be best secured by having only young and vigorous queens. Most bee-keepers will have noticed that there is a very great difference in the progress made by neighbouring colonies, some will increase very much faster than others, although they may be about the same strength at starting. It will also have been noticed that some are more inclined to sting and are more irritable than others. Such backward or irritable colonies can be improved by the introduction of selected young queens. The ordinary way of allowing queens to be replaced naturally when the workers will no longer tolerate them, or by swarming, will not accomplish the desired end. It is necessary that we should make a selection of our best colonies and only breed from them. We also consider that the best returns are to be obtained from young queens. Queens may live four or five years, and there are bee-keepers who think they are just as good at that age as when younger; but this is quite contrary to our experience. When queens are stimulated to lay to their utmost, and as much as possible got out of them, they are very little use after the end of the second year. It is certainly to the bee-keeper's advantage to get all the work he possibly can out of them in as short a time as possible, and queen-rearing is so simple that no bee-keeper, who has a dozen or more hives, should be without a stock of young queens to replace those past work.

In selecting colonies to breed from, they should be the two very best in the apiary—one for raising the queen-cells, and the other for raising drones. This should be done early in the spring, about April, so as to ensure the hatching of selected drones before any other drones appear. But it is not yet too late, and even now it is possible to obtain the fecundation of the queen by the Kohler process, already described in 'Useful Hints,' p. 233.

For raising queens, select the best colony, whose queen has proved herself to be prolific, and whose progeny are quiet; and it is most important that they should be good workers. If the bees are already collecting honey stimulation will not be necessary; but if they are not getting any stores they should be fed gently. Be careful to cut out all the drone-comb, and remove any frames containing such comb, and replace them with frames containing only worker-combs, because from this hive we shall raise only queens, and obtain drones from another hive, and so prevent that in-and-in breeding which is detrimental when queens and drones are constantly bred in one hive.

The hive which is to contain our selected drones is prepared by having drone-combs placed in the centre, which the queen rapidly fills with drone-eggs. When the drones commence to hatch out will be the right time to start queen-cells in the other hive, containing only worker-brood. The queen of this hive should be removed, and given to a colony having an inferior one, or can be utilised in making a swarm. After the queen is removed, examine some of the combs, and cut off the edges from one containing eggs, so as to induce the bees to start queen-cells from cells containing eggs, and not from those containing grubs. Any queen-cells already started should be destroyed. To prevent two or three cells being started close together, we remove the eggs from every other cell, and enlarge the mouth of the cells which we select with a piece of wood bevelled in the shape of a cone. This usually insures their being at once utilised for queen-cells. A large number will be started, and we select as many as may be required from those first started, and destroy all subsequent ones.

In about eight or nine days from starting the queen-cells the bee-keeper will be ready to form his nuclei. We use the ordinary hives for this purpose, and generally take three frames from some of our other hives, two of which should contain brood, and the third honey. If so many frames cannot be spared, two will do. These are taken from any of our other hives, taking care not to remove the queens with them; and as all the old bees will return to the stock when the frames are placed in the nucleus, shake or brush the young bees from one or two other combs into it, or about as many as will well cover the frames and keep up the temperature. In this way form as many nuclei as you have queen-cells to introduce. With a sharp knife cut out the queen-cells very

carefully, so as not to damage them in the slightest degree. Leave a small piece of comb attached above the queen-cell, and by this pin it on to a comb in the nucleus with its point downwards. Close up the space with two division-boards, cover to keep warm, feed with syrup, keep the nucleus well supplied with bees, and in three or four days the queen will begin to hatch. They can then be fertilised by the Kohler process, or by preventing any drones from other except the selected hive from flying out. About the time the queen is expected to fly out to meet the drones, a comb of brood should be introduced into the nucleus, and this the bees will not forsake, otherwise they might leave with the queen, and would be lost.

As soon as queens have commenced to lay in the nucleus, they are ready to be used at any time. We generally introduce our queens after the honey harvest, so that our colonies go into winter quarters with young queens, and it very rarely happens that we lose a queen during the winter. Unless we wish especially to keep a particular queen, we replace all our queens at the end of the second season of their existence. The advantages of young queens are (1), that if properly selected they are more prolific; (2) that they are less inclined to lay drone eggs; (3) that they are less inclined to swarm, and swarming is much more easily prevented; (4) that if the queens have ample space in the hives for the full development of their breeding capacities, the colonies become so strong that the amount of honey collected is enormously increased; and (5) that colonies with young queens winter better, and are not so liable to become queenless.

LIVERPOOL EXHIBITION.

We are requested to state that persons having honey on hand for sale may forward the same for exhibition in the sale class at the Liverpool Exhibition. No entrance fee charged. Application must be made at once to J. Huckle, Sec. B.B.K.A., Kings Langley, Herts.

It is proposed to hold an Examination of Third Class Candidates at the Liverpool Exhibition on Tuesday, June 29th. In order that an opportunity may be given to those residing in the Northern Counties and the Isle of Man to compete for these certificates, notice must be given to Mr. Huckle as above.

GLEANINGS.

In *Gleanings* Ernest R. Root says: 'We very much prefer wheat chaff to oat chaff for wintering, as the former seems to be a better absorbent, while the latter, possibly equally good an absorbent, does not dry out. Colonies last year that had oat chaff did not winter nearly as well; the chaff was wet and mouldy, and had become matted down. On the contrary, wheat chaff was nice and dry.'

In the *American Bee Journal*, in answer to the question, 'Is a one-storey hive as good for extracting purposes as a two-storey hive, provided it is long enough to give sufficient room?' G. W. Demaree says: 'I have tried both, and I am sure the "tiering-up" plan gives the best results.' Dadant & Son say, 'No, it places the honey too far from the brood, and spreads the colony too much. We prefer a one and a half storey hive with additional half storeys whenever needed.' J. E. Pond, jun., says: 'Much will depend upon the locality. With me the two-storey hive is preferable, and the labour of manipulation is much less with it also.' James Heddon says: 'I have twice given this query careful and comprehensive trial. The result is, I much prefer the "tiering-up" system, and I wish to have but eight Langstroth combs in each tier.' A. J. Cook says: 'I have not been able to see any difference. I much prefer the latter, as they are so much more easily managed.'

In the *Bulletin d'Apiculture de la Suisse Romande*, M. G. de Layens says, in comparing different systems of bee-keeping, the time employed by the bee-keeper ought to be reckoned, so as to give a fair comparison of the profits. He has carefully put down every hour spent with his bees, and he finds for the last two years it has averaged thirteen days a-year. The average produce of the two years is 450 kilogs. Taking the cost of labour in his district at three francs a-day, and the price of honey at 1 fr. 30 c. a kilog., with labour costing 39 francs, he got honey worth 585 francs. Estimating his 30 hives at 30 francs each=900, and 100 francs for apparatus makes a capital of 1000 francs—the annual interest at 5 per cent would be 50 francs. This, therefore, leaves a return of 535 francs, with an expenditure of 39 francs in labour. In this calculation he has omitted the value of wax, which amply pays for any incidental expenses.

In the *Bee-keepers' Guide*, A. G. Hill, in speaking of the best size for the brood chamber, says: 'When we began bee-keeping, we learned from M. Quinby that 2000 cubic inches is the most desirable size for a brood chamber, and we have never seen anything in our experience to change this opinion. It is a safe size, and that will give the bee-keeper the least trouble, and, considering all things, the most profitable.'

In *Gleanings* J. A. Green says he thinks it quite possible for honey to become poisoned through the crushing of bees. This may also come about by the poison being wiped off from the protruded stings of angry bees. Who, he says, on opening a hive on a cool morning has not noticed the rows of upturned stings, each with its drop of poison on the tip? What becomes of this poison? It is very unlikely that it is reabsorbed by the poison-sac. 'I am familiar with the taste of this poison. I have often tasted it upon my hand, left there by a bee that had not stung me. I have also detected it on the surface of sealed honey by touching it with my tongue shortly after such a display of stings as I have mentioned.' He thinks that in this there is a reason why some people cannot eat honey, and are unpleasantly affected by it, and why with them eating large quantities of it produces such severe results.

In the *American Bee Journal* Professor Cook says it is almost certain there are no plants which secrete poisonous honey. It has been suggested that yellow jessamine (*Gelsemium sempervirens*) produced poisonous honey. It is known that the sap of this plant has peculiar tonic qualities, and so it was suggested that the honey from the flower had the same. This view is not sustained by vegetable physiology or by experience. All secretion from animals and plants is through glandular cells. These do not eliminate sap or blood elements, but secrete nectar from elements in the sap or blood. The nectar is a new substance formed by the gland. Thus there is no reason to think that nectar from a flower will contain poison because a decoction from the plant is poisonous.

In the *Organ für naturwissenschaftliche Forschungen* Dr. A. de Planta publishes his researches on the chemical composition of pollen of hazel. The pollen-grains are three-cornered with rounded sides, and are from 0·026 to 0·0337 mm. The skin consists of an extine with

openings, and an intine, which at a later period is elongated through these openings. The contents of the pollen-grains consist of protoplasm and oils, which in some places appear in large drops. Starch is also found. The intine consists of cellulose, or a cellulose-like substance; the extine consists entirely of cuticule. In the natural state the pollen was found to contain 9·19 per cent of water, 4·81 per cent of nitrogen, and 3·81 per cent of ash. After thoroughly drying, by means of a sulphuric acid desiccator, and subsequently in a hot-water chamber, the residue remaining consists of 31·63 per cent of nitrogenous substances, 64·36 of non-nitrogenous substances, and 4·01 per cent of ash. From his experiments, he has found that the pollen contains globulin, peptones, of which he found 0·06 per cent in fifty grammes of pollen, hypoxanthin 0·15 per cent, and amides 0·37 per cent. The pollen, according to Fehling's test, contained no glucose. On the contrary, cane sugar was proved to be present to the extent of 14·70 per cent; starch, 5·26 per cent of which is also present. The presence of such a large quantity of cane sugar in hazel pollen is not only interesting from a physiological point of view, but also from the part pollen takes in bee food. Dr. de Planta found two kinds of colouring matter, one easily, and the other with difficulty, soluble in water. This pollen contained 2·06 per cent of colouring matters. Also cuticule 3·02 per cent, waxy substances (but these are not definitely identified), fatty acids 4·20 per cent, cholesterin, and 8·41 per cent of a resinous, bitter substance. It is evident from this that the vegetable protoplasm is rich in organic substances, most of which are in the inside of the pollen-grains, as the skin consists principally of cuticule, and a little cellulose and wax.

In the *Bee-keepers' Guide* Dr. J. P. H. Brown says that every queen-breeder who has any practical knowledge of the business knows that no first-class queens can be profitably reared unless all the conditions bearing upon the development are perfect. The colonies in the queen-rearing apiary must be strong; breeding must be rapidly progressing and the hives boiling over with young bees. Both pollen and honey must be coming in quantities to supply all the demands of a populous colony. Settled and mild weather is another factor. The nights must be sufficiently warm so that the royal larvæ incur no danger of getting chilled. Unless these conditions are present queen-rearing is an up-hill business.

The *Bee-keepers' Magazine* says, 'Each apiarist learns something new every year, and it is his duty to impart this information to his fellows, through the columns of his favourite paper.'

In the *Schweizerische Bienenzeitung* J. Halter describes a method of putting a stop to robbing. After trying the usual methods to stop it, when, owing to extracting, robbing had been going on rather extensively, and these remedies failed, he succeeded in putting an end to it in a very simple manner. He placed a piece of window-glass, about 8 by 5 inches, in front of the flight-hole, the top resting against the hive and the lower end about 1¼ inches from the entrance, so as to enable the bees of the hive to go in and out at the sides. The next morning the robbers made an attack on the hive in great numbers, but going straight at the entrance were stopped by the glass. They swarmed in front of the glass, but could not find the entrance at the sides, and very soon returned in disgust. To effectually put a stop to further robbing the glass should be allowed to remain for several days, until the robbers forget the spot.

In the *Canadian Bee Journal* S. Cushman says, 'With nitrogenous as well as carbonaceous food a certain amount of exercise (not perpetual however) would increase the vitality as well as the heat of the body. So if bees warm up by exercise (and I have no doubt they do if exposed to sufficient cold or with loss of heat from top ventilation) then there is all the more need of pollen in the hives. I believe pollen to be necessary at all times as food for bees; a very slight amount may be needed when in the winter cluster and undisturbed by heat or cold, but the little then needed is just as important when needed as at any other time. I want pollen in the hives at all times. The theory that there can be no diarrhœa without pollen and that bees will winter better without it I consider a false one and against common sense.'

In the *Bulletin de la Société d'Apiculture de la Somme* J. B. Voirnot says the constant use of honey is without the slightest danger even during an epidemic of cholera. Honey prevents or cures constipation. The formic acid which honey contains makes it useful in affections of the mouth, throat, organs of respiration and chest. Professors, and all who have to speak in public, should consequently make frequent use of honey. It is also good for colds, coughs, hoarseness, quinsy, pulmonary affections, catarrh, and asthma. A little goose-grease mixed with it adds to its curative properties.

In the same paper the editors say that essence of eucalyptus has been proposed as a cheap and effective method of curing foul brood. A few drops of this essence are poured on the floor-board of a hive infected. The evaporation prevents the healthy brood from being affected and the diseased brood disinfected is removed by the bees. The vapour of this essence destroys the microbe of foul brood. A few drops of essence of eucalyptus in the food also have a salutary effect.—[We believe M. Bauverd, of Geneva, was the first to recommend this treatment.—Ed.]

In the *Bee-keepers' Guide* G. W. Demaree says in all his experience he never knew a queen to mate before her third trip from the hive, and it will be admitted that these several trips in the air in the immediate vicinity of her home give her some experience of the locality. But the young queen has advantages that workers do not have. When she leaves the hive the workers collect on the alighting-board and keep up a lively movement till the queen returns. These movements on the part of the workers at the entrance of the hive answer as a signal from the home of the returning princess. With these advantages in her favour the young queen rarely ever enters the wrong hive. In fact, he does not believe it ever occurred except in the case of two queens going out at the same time from adjoining hives.

In the *Bulletin d'Apiculture de la Suisse Romande* Charles Dadant says, frequently enough, two queens, the mother and her daughter, are found living in peace in the same colony, both laying and living side by side without interfering with each other. This takes place when the bees, having recognised the failing fecundity of the mother, have made preparations to replace her by rearing one of her daughters. But this abnormal state of two queens in one hive generally only lasts a few weeks, or at most a few months.

In *L'Apiculteur* M. Hamet says he is the oldest member of publishers of bee literature. The *Apiculteur* is in its thirtieth year, and besides this he has issued several other publications. By the end of 1886 he will have issued 70,000 volumes and pamphlets, viz., 40,000 vols. of *L'Apiculteur*, 18,000 vols. or *Cours d'Apiculture*, 8000 *Calendiers apicoles*, 4000 *Anesthesies*, and several others jointly with other authors.

IN GOOD HONEY YEARS FOUL-BROOD DISAPPEARS OF ITS OWN ACCORD.

In order to prove this truth I send you the following instances:—

1. In 1880, foul-brood broke out in three apiaries in Enzheim. For three years I cured according to Hilbert's method, destroyed several hives and kept continually the whole of the stations here under my

own careful control and care. In the summer of 1882, I was positive that foul brood had entirely disappeared. As the months May, June, and July, were good honey months, the bees were in good condition. In the bad honey years 1880 and 1881, the treatment was without success.

2. In 1881, hives affected with foul-brood appeared in a neighbouring district. It was no use thinking of a regular cure there, for the greater number of the bee-keepers had no idea of the danger, which threatened their pets and the latter were left to themselves; but in the summer of 1882, no trace of foul-brood was to be found in this neighbouring place, and the hives were full of bees and honey, as at Enzheim.

3. In the spring of 1884 foul-brood was raging at all the apiaries in the Hasel and Breusch Valleys. Mr. Vierling, a distinguished bee-keeper from Niederhaslach, effected cures in many apiaries, according to Gravenhorst's method, by means of carbolic acid, and towards the end of the summer of the same year the disease had been removed.

4. On June 10th, 1884, Mr. Vierling found the only surviving hive in the apiary belonging to the miller Siat in a high degree suffering from foul-brood, diffusing quite a pestilential odour and exceedingly weak and inactive.

The owner, however, would not follow Mr. Vierling's advice, to destroy the hive at once, but left the bees to their fate.

Mr. Vierling was not a little astonished when, in the spring 1885, Mr. Siat requested him again to look at his hives and bees, which were again busily flying in and out. He was even more astonished when he found the bees perfectly healthy. The foul-brood has, also, entirely disappeared at the present moment from all the apiaries in both the above-mentioned valleys, as well as from the skeps as from the moveable-frame hives, the half of which had undergone no cure whatever.

The summer and the autumn of 1884 were exceedingly good honey seasons in all the valleys of the Vosges, and to such an extent even, that Mr. Vierling's hives which were suffering from foul-brood in the spring produced a great quantity of slung honey in the same year.

In all the above-mentioned cases, those hives which were subjected to an artificial cure, as well as those which were left to themselves, recovered at the same time, and each time in consequence of a good, long continuing honey season. From this we must conclude, that the bees themselves possess a means of overcoming this pestilential disease effectually, and this effectual antiseptic is nothing else than formic aid, or bee-poison.

In a bad honey season the activity of the bees is reduced to a minimum. As at such a time there is no loss of working powers, little is eaten, and in consequence of this, only little formic acid produced. The evil-smelling miasma of foul-brood seems to force the bees to complete inactivity and to take from them all pleasure in the keeping clean of their dwelling. Should no great influx of honey disturb such a lazy life, an infected bee-hive is irrecoverably lost, in spite of all application of thyme, camphor, salicylic acid, and whatever other remedies there are, that have been praised by tongue and print.

It is quite different when suddenly a glut occurs. Let us then consider the life in the interior of a hive. How busily they are all running backwards and forwards, how the cells get filled, how diligently they build!

The diligent workers are no longer frightened by the decaying corpses of the dead brood; they must be removed, for there is a want of room. The soiled cells are cleaned again in a few hours, and instead of the foul-smelling, pestilential odour, the bee-keeper is greeted by a pleasant smell of honey and wax, in which it is easy to perceive the sharp, somewhat poignant smell of formic acid.

The more honey that is brought in and carried from cell to cell, the more formic acid is brought into use, and the sooner the foul-brood disappears.

The radical cure of a hive suffering from foul-brood is, therefore, only possible in a good honey year, and without the intervention of the bee-keeper himself.

Whether the same end can be also attained in a bad honey year by artificial, uninterrupted feeding, and by allowing the bees to build freely, will be taught by the future. Instead of an addition of carbolic or salicylic acid, I would introduce with the food the bee's natural remedy—formic acid, in small doses. Formic acid is to be had in every druggist's shop.—Dennler, *Enzheim, Nov. 11th*, 1885, *Elsässich-Lothringische Bienen-Zuchter.*

[This article has appeared in several Bee papers, and we give it here because we wish our readers to know all that is being done with respect to foul brood. We would, however, point out that the theory advanced is in direct opposition to our experience, and that although a cure may be easier in abundant honey seasons, yet it is quite possible even in bad honey seasons—as we ourselves have proved—to cure foul brood. We are very glad to find others have done the same. M. Bertrand, in the *Bulletin l'Apiculture de la Suisse Romande*, points out that the seasons when he cured his hives were particularly bad, and he winds up by saying, 'Cholera, another bacillus disease, appears, rages, and ends by disappearing of itself; is it not combated from its commencement without waiting for it to finish its work and exhaust its vitality?' We would, therefore, caution our readers not to trust to this 'let-alone' principle. We would also recommend them to be careful with the proposed remedy, and not abandon those already proved to be efficacious, for one not yet tried. In the *Schweitzerische Bienen Zeitung* for March, M. H. Hœusser also criticises M. Dennler's article, saying he has completely cured foul brood in his apiary by Hilbert's process, and that his experience does not at all confirm M. Dennler's theory with regard to the spontaneous disappearance of foul brood in good honey seasons.—Ed.]

Foreign.

FRANCE.

It appears that in the Ministry for Commerce, a statistic of French apiculture is made up annually. The latest taken is for 1881, and has been published by our contemporary the *Apiculteur* a couple of months ago. These figures show that the number of stocked hives throughout France in the year in question was 1,669,759, and their product is represented by 8,566,542 kilos of honey and 2,644,762 kilos of wax. If the value of the honey is estimated at one franc per kilo, equivalent to about 10*d.* per 2 lbs. 3 oz., the market value of the whole of the honey produced in France in 1881 would be about eight millions and a half of francs, and that of the wax another eight millions, if valued at three francs per kilo. Compared with the three previous years, the above figures offer the following comparison:—

	Stocks of Bees.	Value of Honey.	Wax.
		Francs.	Kilos.
Totals for 1881 ...	1,669,579	8,566,542	2,644,762
,, ,, 1880 ...	1,771,073	8,613,645	2,660,701
,, ,, 1879 ...	1,808,518	8,581,678	2,472,942
,, ,, 1878 ...	1,371,365	9,948,643	2,845,729

These statistics embrace eighty-seven Departments, of which the following are a few of the most 'populated'

from an apicultural point of view, their respective figures being as under:—

	Stocks of Bees.	Value of Honey.	Wax.
		Francs.	Kilos.
Allier	18,227	48,025	35,178
Lower Alps	25,000	106,250	45,000
Upper Alps	14,150	21,250	14,150
Ardèche	22,440	73,953	33,615
Aube	30,000	153,000	54,000
Aveyron	25,000	100,000	37,500
Corrèze	40,000	80,000	40,000
Côte-d'Or	26,106	23,495	22,190
Côte-du Nord	62,000	496,000	229,400
Finistère	72,000	486,000	108,000
Ille-et Vilaine	70,000	367,974	137,990
Isère	28,000	168,000	42,000
Loire-Inférieure ...	10,000	360,000	40,000
Lot	25,000	50,000	25,000
Manche	42,350	249,865	50,820
Morbihan	68,575	411,450	137,150
Pas-de-Calais	18,473	146,860	31,404
Saône-et-Loire	35,000	218,750	47,250
Haute Savoie (Upper Savoy)	21,815	104,712	39,267
Somme	27,902	118,572	37,389

It further appears that in 1881 the actual number of stocks within Paris itself exceeded one hundred.

In commenting, however, upon the foregoing figures, the *Apiculteur* advises its readers not to put implicit faith in their correctness, for having, in the majority of cases, been taken down by wood guardians (*gardes champêtres*), it is allowed to suppose that in many instances the hives have been counted from a distance without ascertaining whether they were all stocked or not. Moreover, when the figure has been furnished by the cottager bee-keeper himself, its accuracy does not become more reliable, for this class of people are naturally of a suspicious nature, and look upon all such inquiries as the forerunner of a new burden in the shape of a fresh tax upon their limited income.

CANADA.

Bee-keepers' Convention in Oxford, Canada.

A number of the counties in Ontario, Canada, have organized local bee-keepers' associations. These associations meet at time and place in the county appointed by its members. They are generally quarterly, and are the means not only of fostering a more friendly relationship between those interested in apiculture, but aid materially in the advancement of profitable bee-keeping.

Amongst such associations in Canada that of the County of Oxford, which met at Woodstock, May 1st, 11 a.m., claims a high place. There were present forty-four members. The president, Dr. Duncombe, of Embryo, in the chair. Reports of wintering were received, and the loss is estimated at a trifle over 10 per cent. This estimate is from about 900 colonies, only a partial report of members. The question of spring management was taken up, the Canadian climate is such that April and early May is uncertain as to degrees of heat. It was generally advocated to contract entrances during cool days and nights and put chaff cushion above the frames, making all comfortable, especially for the weaker colonies. This is the general method adopted in Canada during spring.

Introducing queens was next brought up. It was advocated to wait until cells had been capped five days if it was desirous to introduce a virgin, and then let her out of the introducing cage. The bees are then apt to take her for one of their own cell inmates emerged and leave her unmolested. Although it is difficult at times introduce queens, especially virgins, after having for some time left the cell, much depends upon the care exercised in releasing her from the introducing cage and closing the hive.

Mr. J. B. Hall was then requested to give an account of what had transpired during his visits to Toronto in connexion with the Colonial and Indian Exhibition. Mr. Hall stated everything was progressing favourably; the Oxford county had promised to send more honey than any other county in the Dominion.

Mr. C. Malcolm, of Innerkip, in speaking of success in bee-keeping, stated he found no certain rules could be laid down, so much depended upon circumstances. He found that in his cellar for wintering colonies side by side, and apparently in equally good condition in the fall, had come out of vastly different strength in the spring. He thought the constitution of the bee was not sufficiently studied. Queens, who threw worker progeny, which proved themselves not as vigorous and capable of withstanding hardships as others, should be carefully excluded from the apiary. By closer observation these weaknesses might be noted. The general impression was bees had bred more during the winter than is customary. This had caused an unusual consumption of stores, and many of the colonies lost had starved. The question of whether feeding should be done in the fall to stimulate brood-rearing, and the almost unanimous verdict was no. He kept his cellar from 48° to 88°, and bees commenced breeding towards spring as the temperature raised. The advisability of wintering in a cellar without bottom boards was discussed. Few had tried it—those that had favoured such a method.—R. F. Holtermann, *Brantford, Canada.*

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

HONEY AND FLOWER SHOWS.

[304.] Another season has ushered upon us the usual bustle and anxiety regarding our annual exhibition. The getting up of a schedule for such may seem a light matter, but I am afraid none but those who have undertaken the duties which usually fall to the lot of a general secretary have any idea of the difficulties to be surmounted in getting everything satisfactorily wound up, and all as far as possible pleased, whether on the winning or losing sides.

From experience I know such undertakings are not always of the most pleasant nature, for in our best efforts we often find when once the work is over that there are sure to be novices and theorists making new discoveries, finding fault with everything done, and even suggesting ideas which in many cases if adopted would prove ruinous to every bee-keeper, while the actual practical issue is lost sight of, and ingratitude is too often the final result obtained from those even who have had the greatest gain. Notwithstanding these unfavourable criticisms 'Shows' must ever continue to be the only practical source of information and education on the different improvements habitually springing into existence.

'How to organize apiarian exhibitions in rural districts' has taken up my attention for several years, and I purpose as briefly as possible to give a short outline of how

we were enabled to introduce the 'hobby' into this district and at the same time make it the means of resuscitating a Horticultural Society of over twenty years' standing. For several years this Society was gradually losing the confidence of the public, consequently its failure was a foregone conclusion. In 1882 matters had assumed a very gloomy aspect. The following year I felt impressed that an exhibit of bees and honey might assist in increasing the public interest, and having submitted my plans to the directors they were readily accepted, and eventually with the assistance of my two brothers the first apiarian display was inaugurated with great success. Unfortunately the horticultural department was again a failure, and at the annual meeting the directors resigned, and a vote was almost carried to wind up the Society. Some of us thought it hard to give up such an old important institution, and so willing volunteers came forward to make another effort, the writer undertaking the duties of honorary secretary.

Our first business meeting resulted in the addition of an apiarian department to our proposed schedule, and this I believe was the first amalgamation of a Horticultural and Apiarian Society in Scotland. The increased interest manifested in 1884 was most encouraging, and the result was that the annual exhibition turned out the most successful held for many years.

In the Apiarian department our Committee wisely resolved to leave every class open, as very few bee-keepers were in the district, and thus every one interested had the facilities afforded of making the first competition a success.

In the honey classes my brothers were again the principal exhibitors, while the other classes were mostly got up by myself; these included an Observatory hive at work, a model apiary, collection of honey goods from Mr. Moyle, and of natural history objects, diagrams, &c., all relating to the study and management of the bee.

The present year (which happens to be the twenty-fifth anniversary of the Society) promises to be the most successful ever held. Over 50*l.* in cash, medals, &c., is offered and already guaranteed by the directors; we have also secured the Highland Society district medal for our honey department, and above all, we are able to confine our apiarian classes to our own district, thus fulfilling the duties of every local show, in specially providing for the individual amateur who may exhibit for the first time. You will see from the schedule, which I herewith enclose, that open and confined classes are even made among ourselves, so that a truly representative competition may be the final outcome.

I can, with every confidence, commend our experiment as a means of introducing practical bee-keeping in country districts, where apiarian shows of themselves cannot be thought of, and thus the risk and expense combined would certainly be reduced to a very trivial matter.

Unfortunately many of our local exhibitions are mismanaged alike by over-zealous directors and competitors, and I trust in a future article to describe the different classes of competitors we meet at all 'shows,' whether of flowers, honey, poultry, &c., and the different tactics many adopt to become prize winners even in the face of the most stringent rules, and also show how the rules of every association might be framed to at least partially remedy this glaring defect, and render more interesting all our public competitions.—E. M'Nally.

CUMBERLAND JOTTINGS.

[395.] I have a wish to say a word or two about bee-keeping here. I'm afraid if my bees could have read the glowing accounts of your management—for which we are so very much indebted to you—they would prefer to be similarly treated. In passing, I may say that, following the instructions given in your *Guide Book*, I worked two hives on the doubling system last year, and was more than satisfied with the result in both cases. One hive was a large one holding seventeen frames single, or thirty-four doubled, and the other an ordinary ten-frame hive. In both cases the upper set of frames were extracted when sealed over; your explanation of the improved system of storifying (page 253, vol. XIII.) coming to hand too late for last year.

The winter in this part of Cumberland was unfavourable for both bees and bee-keepers, and the spring has been still more so. I hear many complaints of bees dying and weak stocks. The cold east winds and rains have checked breeding, and but for the assistance of the feeding bottle would have wrought serious mischief with hives full of brood, but with little stores. On Wednesday last I noticed from my windows the last patch of snow on the Caldbeck Fells—some twelve miles distant—which I am happy to say has disappeared altogether under the bright sunshine of the past few days. Since Thursday last we have had splendid weather, and the bees are working with a will on pear, apple, and sycamore blossom. Arabis is about finished; red clover is coming out—though I have not yet seen the bees working on it. They did well on the currant blossom and wallflowers, but missed the splendid show of wild cherry on the few large trees in my garden field.

My own bees (five hives) have passed through winter fairly well, and are now making good progress; two of them covering fifteen frames, with brood on all except the outside ones, and a third on ten frames. The remaining two are on seven and five frames respectively, and will be used probably as nuclei.

As an instance of the value of winter passages during a long spell of severe cold, I may mention that in closing up my hives last autumn I neglected to cut passages, and found on opening in spring a thick seam of dead bees in the centre of one of them, all the honey consumed from the combs on each side, while the bees on each side were living and had abundance of food. Fortunately the queen was safe, and is now doing well in a small way.

I tried dry sugar feeding during the spring of 1884, but could not satisfy myself of its economy as I noticed through a small window in the back of feeder that the bees were apparently unable to reduce a large portion of the sugar (Demerara) the upper surface—half inch or so—being thoroughly desiccated, and the colour changed from brown to white. Some of the bees were busy pushing their tongues down to the original brown, while others were as busy carrying out of the feeder, and no doubt out of the hive, the hard desiccated particles. Water was supplied by an ordinary feeder on the hive, and the bees seemed to make use of it for some purpose. I had not then adopted the American cloth, and probably I shall be told that therein I failed; but the Turkish bath was not then so fashionable, and that must be my excuse. I can understand that by applying moisture through contact with water the end may be attained; but I am doubtful whether the bees are sensible enough—or foolish enough, I don't know which—to carry water into the feeders to cook artificial food. It would be interesting to know the value of the food taken and rejected in this way, and also the relative value of the labour expended by the bees, profitably and unprofitably, and of the little extra labour shirked by the bee-keeper.

It was my intention to make further experiments in this line, but circumstances, &c. A friend of mine had similar experience with 'Good's food' this spring: the particles of sugar being distributed around the hive entrance.—The Collier, *June* 7.

EXPERTS AT THE UNIVERSITIES.

[396.] May I suggest that the B.B.K.A. should send a competent lecturer to the Universities? In the gardens

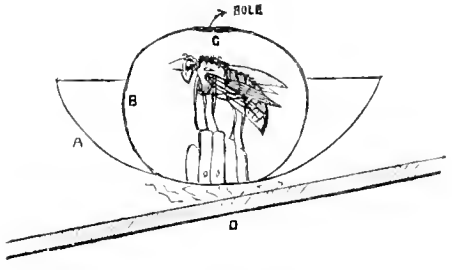
stocks could be kept, and as nine-tenths of the clergy are educated at the Universities an impetus would be given to the art of bee-keeping which would be greater than any number of local Associations.—E. Liddell.

WASPS' NEST.

[397.] Allow me through the medium of your columns to insert a letter (which if not apiculture is very much akin to it), the purport of which relates to the wasp. Of late I have noticed in your most valuable paper small paragraphs referring to the extraordinary quantity of female wasps about this year. I think they must be making nests now as I have not seen nearly so many this last day or two, and I think I can confirm this observation by relating the progress of a nest built in a hive cover.

In turning up a cover a few days ago, in which I had noticed a female wasp going in (the perforated zinc over the hole had fallen down during the winter), I found two cells each with an egg in, enclosed in a ball of delicate tissue-paper-looking substance, in the top of

Section of Nest. Full Size.



A.—Outer wall.
B.—Ball with cell and wasp enclosed.
C.—Hole through which the wasp enters.
D.—Hive roof.
Of course, this is inverted.

which there was a hole through which the wasp passed to the cells. The following day I noticed three more cells had been built during the night, but there were no eggs in them; the next day I found that the wasp had begun to build another wall about a quarter of an inch off the ball containing the cells, there were no more eggs in the other three cells. The following day between six o'clock a.m. and dinner-time the wasp raised the wall half an inch—this I consider enormous for an insect, the material it used was still wet in some places and is of a light grey colour. The nest now presents another wonder of insect architecture looking somewhat like a flower. The wasp is very tame, for when the cover is lifted up the wasp keeps at its work, but will fly off if the cover is not soon returned. I write this, not as a piece of instruction to the reader, but I thought any who have not seen one might like to know how they began their nests and how they started a colony. I shall cut the nest out and keep it among my 'curiosities.'—F. K. Preston, *Dudley Road, New Somerby, Grantham.*

Review.

Bee Pasturage. By Henry Dobbie, Certified Expert of British Bee-keepers' Association. (Jarrold & Sons, London.)—The author of this little work is known to our readers as a contributor to our pages on bee flowers, and the results of his practical experience and cultural directions of the plants most visited by bees are here given. It is free from technicalities, plain language and simple terms being used, so as to bring it within the comprehension of the humblest cottager. In his anxiety to be plain, we think our author has sometimes erred. English names of flowers are all very well when they are explained, but we think they should be accompanied at any rate by the botanical Latin names, so as to show what particular plant of a family is meant, and, above all, purely local names should never be used. We will take as an instance *Balm*. There are no less than eight different plants called by this name, some of which we know are of little value, and one of them is not even nectariferous. How is the uninitiated to know which of these balms he is to cultivate? Then, again, *Charlocks* is purely a local name, and a cottager in Sussex would not understand what was meant by the word, although a Norfolk one might. Now, *Sinapis arvensis*, which goes by the name of *Charlock*, in some places rejoices in no less than ten other names by which it is known in different parts of the country. These names are, *Brassies*, *Brassock*, *Carlock*, *Corn mustard*, *Field kale*, *Kedlock*, *Kerlock*, *Kelk*, *Wild kale*, and *Wild mustard*. How many Norfolk men would understand what was meant by *kelk*, the common name for this weed in Sussex?

We trust that in a second edition this confusion will be remedied, and thus enhance its usefulness. We would also suggest that a slip, pointing out the orthographical and typographical errors which sometimes it is difficult to avoid, should be pasted into the present edition. The chapter on sowing seeds, soil required, and the future treatment of the young plants, is very useful, as there is much ignorance on these points. There is also a chapter on 'Honey, Honey Dew, and Pollen,' but, as our observations, now carried on for more than twelve years, and upon upwards of five hundred species, are somewhat at variance with the author's, we hope at some future time, when we can spare the space, to enter more fully into the subject. At the end the author gives a list of bee flowers and their approximate honey and pollen values. These are expressed in per-centage figures, which we have always looked upon as a very erroneous method, and very incomprehensible. All the plants named are useful as honey or pollen producers, but what does 30 per cent of honey in, for instance, *Barberry*, mean? and how have these figures been carried out? Again, what is the meaning of the honey value of lucern being 90 and sainfoin 75? What experiments have been made to prove that the latter is inferior to the former, or that they are equal as pollen-producers? On the contrary, sainfoin is *par excellence* in the first rank as a honey plant, and, according to our observations, even better than lucern, for it yields, in addition, pollen, which the latter does not, owing to its peculiar construction. Lucern, owing to its explosive flowers, scatters the pollen as soon as an insect alights on them, and we have repeatedly noticed that the honey-bee avoids very carefully this explosion by inserting its proboscis laterally close to one of the wings, so that no explosion occurs, and consequently no pollen is collected.

We have always maintained that the best arrangement of bee flowers was to place them in three classes, and in this way we prepared some years ago, at the request of the British Bee-keepers' Association, the list of flowers sought after by bees, since published by Messrs. Sutton and Sons. The plants were divided into three classes, represented by figures, 1 being *moderate*, 2 *good*, 3 *very good*.

We are also curious to know how it was ascertained that bees collected any honey at all from wild clematis. We know that bees will collect honey in some districts from certain flowers when they do not in others, but we have examined bees working on this plant in England, France, Germany, and Switzerland, but have never yet succeeded in finding that they collected anything but pollen, although Dr. Alefeld, of Germany, states that he has sometimes succeeded in finding honey in the stomach when bees were working on wild clematis. As another curious instance we will mention *Limnanthes*, which the author says with him the bees do not visit. On the con-

trary, with us in Sussex our beds of *Limnanthes* are covered with bees from morn till night.

All the plants named in the list are useful, and should be grown where possible. Although we do not think that large harvests of honey will be got from growing a few plants for bees, yet we quite agree with the author that much can be done to benefit colonies by planting for spring bloom. If every one were to sow seeds, much more could be done. Many plants are common weeds, and can be easily increased to our advantage in our hedgerows and woods. We have in this way planted thousands of plants of *Nepeta cataria* and *Scrophularia nodosa* in the forest adjoining our property, so that now these plants, formerly rarely found, are beginning to be quite plentiful, and we hope also to yield us some return for our trouble. We recommend *Bee Pasturage* to all bee-keepers, and hope that they will not only derive a pleasure from carrying out its instructions, but that they will also benefit by a greater harvest of honey.

Echoes from the Hives.

Alfriston, Sussex, June 12.—Honey has been coming in fast for this last week, but the temperature is low; wind from south-east being very cold for two or three days. All my hives have large quantities of sealed honey. On the 10th I took four or five sections from one stock; all others are at work in supers. One lot I have had to give a second crate of sections to prevent them swarming.—J. H. Levett.

Holme Apiary.—On the 7th inst. a decided and genial change, continuing until the 11th, when showers followed each day more or less. Rain and sudden change for cold this afternoon, to the effect of drone and drone larvæ being expelled from most colonies. During fine warm days, nuclei have been formed; Syrian and Cyprian queens successfully introduced. Super racks have been placed, but no storing commenced, not from lack of workers, but want of continued fine weather for Flora to secrete the coveted nectar.—John H. Howard, *June* 14.

Lismore, Ireland.—Some improvement in weather. But the late storm has so destroyed the hawthorns' bloom and foliage, that there is not much honey coming in. The little yellow bird's foot trefoil promises to bloom abundantly. I am sending three hives to the mountain in a day or two. I send them to a cottage just at the foot of the mountain, so they get a fine double harvest, heaps of white clover and flowers in the upland pastures to the south and great stretches of mountain heather to the north. This is excellent for any hive that is backward, as the white clover is ten days or a fortnight later than in the valleys and lowlands. Hives all in splendid order, full of bees and ready for the honey—if it comes.—Irish Novice.

NOTICES TO CORRESPONDENTS & INQUIRERS.

East Dulwich.—*Feeders.*—In cutting the hole from the enamel cloth, it is required that the hole should not be too large, so that the heat of the interior of the hive should not be unduly reduced. As you request us to mention a good syrup feeder, we can recommend the Raynor feeder. When using this, it is necessary that the circular piece cut out of the quilt should correspond with the inner circle of the stage, which is dome-shaped, and the feeder is placed over it. The under side of this stage is lined with cloth, is impervious to moisture, and non-conductive of heat. When placed on the frames over the centre of the cluster, the heat ascending makes the dome the warmest part of the hive, and the bees are able to feed in the coldest weather and without any disturbance of the cluster.

E. Davis.—1. The queen must either have been old or out of condition from some cause. She evidently was unable to rise to the call of the bees, and to escape their not too gentle stimulation, she found refuge in flight. 2. Queens do not leave the hive for the purpose mentioned. 3. The best sugar for making syrup is Duncan's pearl, or some granulated sugar similar to it; the sugar candy from the shops is not to be recommended for making syrup.

Morning Star.—*Langstroth Hive.*—You will find in Dr. Langstroth's *Hive and Honey Bee* engravings of his hive and particulars of its dimensions. The Langstroth hive contains ten frames, $17\frac{5}{8}'' \times 9\frac{1}{8}''$. It is $18\frac{1}{4}''$ long, $14\frac{3}{8}''$ wide, and $9\frac{3}{4}''$ deep. The super case holds seven frames, each capable of holding three $5\frac{1}{4} \times 6\frac{1}{4}$ sections. Since its invention in 1851 it has undergone various modifications. Mr. Heddon prefers an eight-frame Langstroth containing about 2000 cubic inches, while the ten-frame Langstroth is the one recommended by Mr. A. I. Root, containing more than 2500 cubic inches. There is nothing special in the exterior appearance of this hive to require an engraving.

Miss Carter.—Disease is not the cause of the bees bringing out the immature food. It is indicative of the shortness of stores; and this is the bees' mode of equalising the amount of stores and that of the number of consumers.

A. B.—*Queens Mating. Queen-cells.*—(1.) The proof of fecundation on the day it takes place can only be ascertained by observation. On returning to the hive, after meeting the drone, the generative organs of the latter may be seen projecting from the abdomen of the queen. This is quickly removed by the bees, but cases have been noted in which it has remained for several days, the bees apparently being unable to remove it. About the third or fourth day after mating the young queen begins to lay, depositing her eggs in a regular and orderly manner. (2.) Queen-cells are sealed over on the ninth day from the laying of the egg. The young queen leaves the cell on the sixteenth day, and takes her wedding flight about the fifth day of her age, weather permitting. (3.) The insect on the bee is the bee-parasite called the *Braula cæca*. As the season progresses these insects die off. They generally accompany bees imported from the south of Europe. (4.) The distinguishing marks of the Carniolan bee are not very perceptible in the bees forwarded, the special greyish pubescence having since death almost disappeared. So far as we can determine, we are inclined to say that they are of the breed mentioned.

William Walker.—*Transferring from a Skep.*—Drive the bees from the skep; cut the skep from top to bottom between the central combs. Cut out the combs, and fit them into the frames of the bar-frame in the same position they occupied in the skep—that is, top side uppermost. Tie the tapes around them. If the comb is not deep enough to fill the frame, place a lath beneath, and tie it so as to bring the comb to the top of the frame. Comb-foundation being now so cheap, discard all crooked or imperfect comb; reject drone-comb. When the frame and sheets of foundation are placed in the new hive, place it on the old stand, and shake in the driven bees on the top of the frames, or throw them on a sheet on the front of the hive. Feed the bees, and in two days the tapes may be removed. 2. *Excluder Zinc.*—Zinc with oblong holes ($\frac{9}{16} \times \frac{5}{16}$) is accurately cut to exclude drones and queens; but bees laden with honey are able to pass through.

M. C. H.—*Foundation Fixer.*—We are in the habit of using the foundation-fixer invented by Abbott Bros., which answers our purpose very well. Some persons prefer Parker's foundation-fixer, which may be procured from most purveyors of bee-appliances.

B. A.—The enamelled cloth may be retained on the frames during the summer with two or three folds of blanket, and with a proportional number more during the rigour of the winter.

E. H.—*Dried Pollen.*—The contents of the box forwarded were the hardened pellets of last year's pollen. Old pollen is frequently neglected by the bees when the fresh pollen is brought in. No harm can result to the hive from its presence.

Frodsham.—*Red Ants.*—A bee-keeper recommends the following plan for preventing ants entering hives:—'Take four stout nails $2\frac{1}{2}$ or 3 inches long, and put them into the legs of the stand endways, so that they project about $1\frac{1}{2}$ inches. Take four garden-pot saucers, fill them with water, and place the stand in them, and no vermin will be able to crawl up the legs into the hive, and the nails will keep the ends of the legs out of the water.'

T. S.—Your suggestion will be submitted to the proprietor, and no doubt it will receive due attention.

Irish Novice.—*Foul Brood.*—The piece of comb forwarded

was affected with foul brood; and if as you say it was the best bit of comb in the hive the remainder must have been very bad.

R. K.—The use of ½ starters instead of full foundation sheets is, we consider, a retrograde step, as it will impose a considerable amount of unnecessary labour on your bees. However, with feeding the plan will not materially injure your prospect of getting honey, and it will prevent the recurrence of the sheets getting sagged.

A correspondent inquires the names of some parasites on bees forwarded. When we examined the box, the lid had been staved in, and the bees were absent. Most probably the parasites were Braulæ cæcæ.

Modern Bee-keeping has now reached its forty-fourth thousand—the largest circulation attained by any work on bee-keeping. This last edition has been carefully revised, and its information has been brought up to the present time; several new engravings have been added.

Mr. Cowan's *Guide-book* has not lost its interest, and the sale of it continues to be very active. The thirteenth thousand is now on sale. The late edition has been thoroughly revised. Simmins' dry sugar feeding and the effect of carbolic acid have been described.

CRATES FOR SECTIONS.—Many of your readers may be glad to know that fancy soaps are often packed in boxes 4⅞″ × 6″ × 18″. They can be bought for 2*d.* each and make capital Benthall crates when cut down.—TREVOR SAYNOR.

SECTIONS.—One argument in favour of 4¼ × 4¼ sections seems to have been overlooked, viz, that they contain 36½ cubic inches, while 4 × 4½ only contain 36 cubic inches. An eighth of a cubic inch is not much, but it is something. —T. S.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'THE BEE JOURNAL,' *whose orders amount to Five Pounds per annum, will be inserted Free.*

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
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Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

[No. 209. VOL. XIV.] JUNE 24, 1886. [PUBLISHED WEEKLY.]

Editorial, Notices, &c.

NUCLEUS SWARMING.

At one time it was considered that May was the proper time for swarming, and if we were working skeps and wished for swarms, we should certainly do all we could to get them early. But working with moveable-comb hives we can make our swarms at any time and should select a moment when the bees are not too busy getting in honey. We have during the last few years made our swarms when we required them after the principal honey harvest, generally about the third or fourth week in June, or after the lime-trees had done flowering. There are many ways of making artificial swarms, and recently whilst visiting a friend in northern Italy we assisted in making four on the Vignole system. We have already described this system at some length; but we may mention that it certainly did not take us more than five to six minutes to make each swarm. The queen was found on a frame of brood, and usually the second or third frame lifted out revealed her presence. This was put into an empty hive, and to keep it company another frame of brood with bees was put in next to it. The hive is then put in the position of the parent. This is then placed on the stand of another strong stock, which in its turn is taken to a fresh position. In this way there is an increase of one, but thirteen days later a second swarm will leave the hive unless we make it artificially. We avoid this by the system we are about to describe, and which is known as the *nucleus system*.

At page 268, we described the method we adopt of queen-rearing in nuclei. Each of these nuclei being ready with laying queens, they are at any time available for making swarms. The hives we wish to swarm should be strong, otherwise we should not get strong swarms, and we should damage the colony from which we had taken the bees. Examine one of the nucleus hives and cage the queen on one of the combs. We advise caging the queen if a valuable one, because sometimes when honey is not plentiful, the returning bees are likely to molest the queen, although as a rule, when hives are transferred during honey gathering, there is little risk of losing them. Remove the division-boards, place the combs containing brood and bees in the centre of the hive, and fill up with frames of empty comb or comb-foundation. Then remove the stock from which the swarm is to be taken to the stand occupied by the nucleus and place this where the stock stood. All the bees from the old stock that are out foraging, on their return to their former stand, will enter the nucleus; while the bees from the nucleus, and the young bees remaining in the old stock, will take care of the brood until they are increased in numbers by the rapidly hatching brood. In about twenty-four hours the queen may be liberated.

In managing in this way the parent stock does not lose the queen, and the work in the hive goes on almost as well as before, and having a young queen at the head of the swarm, it also has a good chance of prospering and becoming strong before the winter sets in.

Swarming on the nucleus system should only be done on fine days when a large number of bees are flying; otherwise, if the nucleus appears deficient in numbers, it should be strengthened by inserting frames of hatching brood either from the parent or other hives. If the nights are cold, give the bees only as many combs as they can conveniently cover, and contract the space with division boards.

This is by far the simplest and best system of artificial swarming we know of, as the queen is matured and fertilised before the swarming is performed. There are no queenless parts and no time lost, and the work of the hive is carried on with energy—only obtainable in those having young and vigorous queens. The desire to swarm naturally is checked, much time saved, and the difficulties sometimes experienced with other systems are overcome by a process both easy and gradual.

SOUTH KENSINGTON EXHIBITION.

The following donations have been added to the fund :—

Miss Collin, Essex District Secretary (2nd collection)	£0	10	0
Messrs. W. & T. Sells	0	5	0
Mrs. L. Brown.....	0	2	6
Mr. F. S. Fletcher	0	2	6
Previously acknowledged	154	9	0
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SOUTH KENSINGTON EXHIBITION.

We beg to call the attention of our readers to the full list of classes which appears in the advertising columns of our present issue. In consequence of the lateness of the present season it

has been determined to extend the time for making entries in the honey classes to July 10th. We venture to hope that every bee-keeper who is in a position to contribute towards the display will put forth an effort to assist the B.B.K.A. in making a thoroughly representative exhibition of apiculture as practised in the United Kingdom.

GREAT APIARIAN EXHIBITION AT SOUTH KENSINGTON.

During the continuance of this Exhibition, which will be held from July 30th to August 5th, it is intended to hold a Conference of Bee-keepers to which the Colonial Exhibitors of Honey and others interested will be invited. The suggestion has received the cordial support of the Executive Commissioners, and it is hoped that the interchange of experiences of bee-keepers from all parts of the Empire will not only be of great interest to the members of our several Associations, but will also result in general benefit. Our readers will be glad to hear further on this subject, and we have been promised fuller details when the matters are more definitely arranged.

HONEY EXHIBITS AT THE INDIAN AND COLONIAL EXHIBITION.

On honey 'thoughts intent' we recently wended our way to the above Exhibition. Our quest was the products of the Honey Bee. We were anxious to know the extent of the exhibits of these which had found their way from the many dependencies and colonies of Great Britain. We own to a disappointment in having found them so 'few and far between.' Perhaps our expectations had been unduly raised. Our respected friend and correspondent, the 'Amateur Expert,' has so frequently been telling us, *Mel sapit omnia*, that we had been induced to give credence to the assertion, and we anticipated that we should have had no difficulty in discovering the various displays. However, by dint of perseverance we believe we have had the opportunity of seeing, at all events, the greater portion of the honey exhibits.

Remembering what we had read in the *Journal* of the great interest the Canadian people and Government had taken in the exhibition of the melliferous products of the Dominion, and the extent of space that had been asked for and obtained for their display, we looked expectantly for some grand results from that quarter. In answer to our inquiries, however, we found that the space granted would not be occupied till towards the end of the season, and that we must postpone till then the gratification of our curiosity as to how bee-farming is conducted in Canada, and whether Canadian honey possesses all those qualities for which it has so high a reputation. There is no doubt that when the space is occupied by the appliances for the production of honey, and when the various processes are then shown, it will form a most popular attraction. And if the British Bee-keepers' Association could effect a junction with their brother bee-keepers of Canada the result of their conjoined endeavours would prove one of the most effective and interesting portions of the Exhibition.

Pending the arrival of the above we were fain to rest content with having discovered three bottles of honey in one of the departments of Canada where a variety of food-products were displayed. These bottles had been forwarded from St. Hyacinthe, in the province of Quebec. We were permitted to taste the honey, evidently clover, and we found it of good taste and flavour.

Passing from Canada we next turned our steps in the direction of Melbourne, and we were much gratified by finding a little pile of section honey. We were much pleased by the appearance of these sections. We do not remember ever having seen any more perfect in any show or shop in this country. They had all the excellencies which the most fastidious of judges would have required. If their taste and flavour are equal to their appearance, the introduction of such into this country would prove a formidable rival to our native products.

Our next visit was to New Zealand, and here we found two large consignments of honey. They were in tin cases of various sizes. The honey was the product of the Woodside Apiary, Hautapu, Waitaki, and of that of G. Stevenson, Poverty Bay. Having had elsewhere the opportunity of tasting this New Zealand honey, we may pronounce it to be of an excellent flavour.

The other honeys which we saw constituted a portion of the products of various colonies. Each of them showed a few bottles of honey, but we had no opportunity of gaining a knowledge of their quality. In the West Indies most of the islands exhibited it. In Tobago there was a sample of honey gathered by the native wild bees, very liquid; in St. Vincent there was one bottle; in St. Lucia three, the honey of which was very dark. Dominica, Montserrat, Antigua, Grenada, and Trinidad, all exhibited honey. There was one bottle from Fiji, also one from British Guiana. Cape Town exhibited some honey labelled 'Old Virgin Honey' and 'New Virgin Honey,' the former dark brown and the latter very white.

We did not succeed in seeing any beeswax, but we are informed that there were some samples from the West African Settlements.

This rapid survey shows how widely scattered, through the length and breadth of the earth, the honey-bee is, and that wherever the human race is found there also will 'the white man's fly' be seen. As Longfellow sings:—

> 'Wheresoe'er they move, before them
> Swarms the stinging fly, the Ahmo;
> Swarms the bee, the honey-maker.'

USEFUL HINTS.

It would seem as if our numerous antipodean visitors had brought with them antipodean seasons, so that we were enjoying (?) midwinter in June. Another fortnight of cold weather with cutting winds has been disastrous to the prospects of the honey harvest. The queens being in full season

have in the recurrence of fairly warm days relieved themselves of their eggs, which hatching into hungry grubs constantly demanding sustenance, have taxed the energies of the workers to find the necessary honey, when so little has been secreted, to the utmost, and many stocks have arrived at the verge of starvation. The first symptom, which should never be overlooked, is the

Casting out Drones.—When this is noticed lose no time in feeding. If neglected, the stock will dwindle away, and when the clover and limes are in bloom, instead of having a large population to gather the nectar, they will be just able to live.

Feeding is the only means by which the harvest can be saved. Where crates of sections have been put on, if the hives are long enough to admit of feeding at the back, they need not be disturbed; but, of course, the supply of food must be regulated so as to provide for the needs of the stock without affording an excess to be stored in the sections; no fear need be entertained that when the honey does flow the small amount of food stored in the stock hive will be carried up. If the strength of the stocks is thus kept up, the small outlay will be well repaid when the honey flow arrives.

Delayed Swarming.—When stocks have been at swarming point for some time, and the weather has prevented the issue, it often happens that the young queens hatch out and battles royal take place, in which, sometimes, the young and active princesses slay their royal mothers. This may prevent swarming altogether, or if the swarm does issue, it will of course be headed by a young and unfertilised queen, and while the weather is unsuitable for the flight of queens and drones, the progress of the swarm is delayed. When this is the case, it is as well to give the swarm a frame of brood from another hive. When no brood exists, the bees are liable to follow the queen when she leaves the hive, and so the swarm is lost.

Those bee-keepers who feed their bees gently, and so keep up the population ready for the harvest which surely will come soon, will reap their reward, while those unwise ones who leave things to take their chance, will not only lose the harvest, but will very probably have to invest in food for wintering up to a far greater extent than the small amount required now.

Honey Plants.—This is a good time for sowing the seeds of perennial plants useful for bees. They would be strong enough for transplanting in the autumn or next spring to their permanent positions. Full cultural directions will be found in *Bee Pasturage*, by H. Dobbie.

Water.—Do not forget that bees consume and require a large quantity of water during the breeding season. If this is not provided near the hives, the bees are tempted to go to a distance to brooks or tubs and frequently get lost. Place a pan of water near the hives and throw in a lot of corks cut in two down the centre for the bees to rest upon. A little salt in the water is beneficial.

Old Combs.—We take great care of all our old combs as we have found these most useful. A swarm hived on a set of combs can generally be supered at once, and if honey is coming in plentifully they will take to the supers without difficulty. For the tiering system they are invaluable, and by giving a hive filled with empty combs the bees are saved much labour and time.

Swarms.—Natural or artificial swarms should be fed slowly and the bees allowed only as many combs as they can cover closing up the space with division boards. They will get on much more rapidly than if they had all the frames given to them at once. When all the combs are occupied, give additional frames of comb or comb-foundation.

Separators.—We desire to draw attention to the frequent mistake made by hive-makers in the depth of the separators they supply with section-crates. They are usually much too narrow. We hope that the hive-manufacturers who propose to exhibit at the forthcoming shows will attend to this matter, or otherwise their exhibits may be passed over by the judges. It is very disappointing to amateurs purchasing crates from well-known makers to find that the sections built in these crates are bulged, and not fit for exhibiting as they cannot be glazed.

LINCOLNSHIRE AGRICULTURAL SOCIETY.

Lincoln Exhibition.

We desire to draw the attention of our readers to our advertising columns announcing this great county show, which is arranged to be held at the city of Lincoln on the 21st, 22nd, and 23rd of July, and to the *fact* that the *last day* of *entry* for the bee-department is the 5th of July. We would urge our friends to give a right hearty support to this Society for the kind and liberal way they have introduced, and so very successfully carried on, the bee-department at these annual gatherings. We venture to say too much cannot be said of the importance and value of such societies' aid in the furthering of our object where thousands of people assemble. A simple and *comprehensive* prize schedule is issued, and the entry fees are merely nominal. Our old and experienced friends, W. Martin, Esq.; of Wainfleet, and Mr. R. R. Godfrey, of Grantham, we understand, are the stewards appointed for the bee-department. We wish the Society a successful meeting.

ON THE FOUL BROOD QUESTION.

Coffee as a Destroyer of Putrefaction.

I.

With the approach of spring foul-brood appears again every here and there. Like a black uncanny spectre this worst of all bee-diseases appears from time to time, brings death and ruin to many an apiary, and causes much trouble, and often great loss, to the bee-keeper. The nature of this bee-plague has been scientifically made manifest, and latterly discussed sufficiently in all bee-papers to allow us here to pass it by.

Nevertheless, the opinions of the treatment of this plague are very various. Some recommend salicylic acid, carbolic acid, camphor, &c., and claim to have attained certain cures with them; whilst a large number of bee-keepers deny to these remedies any influence whatever on the course and the disappearance of the disease, and consider the destroying of the infected hives as the only proved means of saving the other hives.

If it were permitted to make an assertion here, we

should allow ourselves the following one: *The former have succeeded in good honey years, the latter in bad years.* [This is opposed to our experience.—Ed.]

On this occasion we again refer to our article:—'In good honey years Foul Brood disappears of its own accord.' [See page 268, *B. B. J.*—Ed.]

The opinion, which is therein represented, that up till now Nature herself is the most effectual combatant against foul brood, has been shared already by many experienced bee-keepers. The notices which have reached us on this subject prove this. We shall refer to them shortly. Lehzen wrote several years ago in the *Centralblatt* that foul brood appears from time to time in certain neighbourhoods of North Germany, but disappears also of itself again. Were this not the case, as Lehzen affirms, were Nature not able to combat this devastating plague, yes, even to extinguish it, the busy bee would already long ago have disappeared from the face of the earth. [Like all epidemics which run their course, but that is no reason why we should apply no remedies. -Ed.]

After all this, therefore, we stand, independent of Dame Nature, somewhat helpless in regard to foul brood; all the more welcome, therefore, should the following communication from Herr Wüst of St. Amarin, Upper Alsatia, on 'Coffee as a Destroyer of Putrefaction,' be for all bee-keepers:—

II.

When in September 21, 1885, at the general meeting in Colmar, all the means hitherto used for the cure of foul brood were roundly rejected on all sides as too troublesome, too expensive, too uncertain, and fire and flame recommended to the expert as the only radical cure, I consoled myself with the hope that our indefatigable scientific men would yet succeed in finding a more suitable means.

As it seems to me now, it has already been found on Alsatian ground by Dr. Oppler (upper staff physician) in Strasburg—a means to be found in every house—in the form of coffee, roasted and pounded to the finest dust.

In the December number of the *Deutschen Militär Arzlichen Zeitschrift*, many observations have been communicated about the application and effect of coffee as 'a destroyer of putrefaction,' which were made on objects easily subject to putrefaction, such as blood, size, and meat.

In a small glass ten grammes of blood were well shaken together with one gramme of powdered coffee, at a temperature of 60° Fahr.; after two days there was no trace of putrid smell.

Blood which had already become putrid was shaken up with one gramme of powdered coffee in a test-tube, lost its smell after half a minute, and remained without smell for one and a half days.

Ten grammes of a solution of size, which had already begun to smell badly, with half a gramme of coffee, well shaken together, lost its smell in half a minute, and remained so after twenty days, although the solution was exposed in an open glass to the oppressive heat of July.

Twenty-five grammes of meat, finely chopped, impregnated with eleven grammes of powdered coffee, left uncovered, showed the same result.

Fifty grammes of meat kneaded together with 9 grammes of powdered coffee, after three days became perfectly dry, without any trace of smell, so that it could be rubbed to a powder, with loss in weight of 64 per cent.

After it had been indisputably proved that powdered coffee possessed the power of preventing putrefaction, and interrupting the process where it had already set in, the next thing was to try this powder in the treatment of wounds.

Two soldiers had got gaping wounds from 4 to 5 centimetres long, penetrating even to the periosteum of the bone of the skull, from a fall from a flight of steps; one had begun to fester. In each case after the finest powdered coffee had been strewn over it, the wound was dry and scabbed over on the following day, and on the third day the man was fit for duty.

Similar splendid results have to be recorded in the treatment of animals with respect to the subduing of bacteria. But bacteria, as is well known, are the bearers of the germ in the bee plague—foul brood. A doubt that the bee-keepers' terror cannot be conquered by powdered coffee seems no longer admissible. The advantages are apparent. The means can be had everywhere, cheap, easy to use, and in larger doses even it is harmless. In what way the application of it will have to follow, the experience of unfortunate bee-keepers will soon show. I for my part would strew or fill suspected cells with powdered coffee, in badly infected hives would break down all brood-cells, which, as they in any case would be completely dried, would be easily cleaned. Too large a dose could scarcely hurt. A very important advantage consists in the fact that as the remedy is to be used dry, it sucks up all dampness, and facilitates greatly the purification of the hive by the bees themselves. Also, as a preventative, an addition of coffee to the water for the bees to drink must be well suited. I beg you will take these words in the way they are intended—as an incitement to attempt cures. The remedy is so cheap, so simple, that it would be inexcusable to subject the poor little darlings to a fiery death without having first tried it.

III.

Bee-keepers! Coffee as a destroyer of putrefaction has attracted the attention of the scientific world. Let us follow the advice of Herr Wüst, and let us devote our attention also to this simple antiseptic. Let us not lose the opportunity, as soon as foul brood appears, of making the attempt of a cure with powdered coffee. It can do no harm in any case. Do not let us let the foul-brood question disappear from the order of the day, until at length the remedy has been found to keep the brood plague in a simple and sure manner far from our apiaries, and when they are infected to free them from it.

In order, wherever it is possible, to derive advantage from hitherto gleaned experience, those bee-keepers who have had already to do with foul brood would render us an obligation if they would send us a short account of their success, or want of success, and further, if it were under the following heads:—

(*a.*) Cause.
(*b.*) Treatment employed.
(*c.*) Eventual success in good honey years.
(*d.*) Eventual success in bad honey years.
(*e.*) Did the disease disappear of its own accord?
(*f.*) Duration of the disease.

We would sift the material we received, compare it, and, if desired, furnish in due time a report through this *Journal*.—Dennler, Editor of the *Els. Loth. Bienenzüchter, Engheim, Alsace.*

ITALY.

According to the *Apicoltore* of Milan, just received, the month of May was all that even the most exacting of the bee-keeping community could desire. In commenting upon the beneficial influence which a good spell of fine weather, at this time of the year, has upon apicultural interests, our contemporary states:—'This year the month of May has borne out its good old reputation in a practical manner. It gave us splendid days, balmy nights, and blossoms in profusion. The acacia trees presented a sight worth seeing: their blossoms hung in large clusters of bunches and in such quantities that, in many instances, the whole tree resembled one huge nosegay. Nor has this imposing display been of no avail to our bees, as was the case, unfortunately, last year. This time honey was flowing in great abundance, and

the practical bee-keeper, in his foresight, had made every possible preparation for its reception, and by this time his barrels are well filled with honey as white as snow and as perfumed as a genuine celestial nectar. Let us receive with feelings of gratitude this new liberal gift of Providence, which will go a long way to compensate us for previous seasons which ended in disappointment. In general, swarms have been rather scarce, and it has been noticed by observers that the migrating colonies were, this season, particularly restless and did not, as a rule, hang long from a tree before they would fly away in search of another. So much has this been the case that where they could not be hived without loss of time, many went away beyond reach.'

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' *All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

QUIETING BEES.

[398.] As an old hand, may I advise at this season that when it is desirable to render bees good-tempered, the intending operator should arm himself with a bottle of syrup, as well as with a smoker? The secret of quieting bees lies in causing them to gorge themselves with sweets, and ordinarily this is done by blowing a little smoke into the hive, which frightens them, and under the influence of fear in ordinary seasons they fill themselves with liquid honey from the open cells within the hive, and in that condition they have no desire to sting. But in this very exceptional season the open honey-cells within a hive are very scarce, and do not afford facilities for one bee in a hundred to get a supply; and as bees quickly recover from the effect of an ordinary dose of smoke, and still have their honey-sacs empty, they very soon assume the offensive as well as the defensive, and become difficult to manage. An ordinary bottle of syrup with a means of spurting the contents on to the top of the frames immediately on removing the quilt (after smoking them) will give them opportunity for filling themselves quickly, and then they will, as a rule, remain quiet whilst being manipulated. This will answer many inquirers as to the cause of bees' 'ill temper' just now, and a trial will satisfy them that smoke alone is still efficacious as a frightening agent, and that sweets are a sure and safe means of quieting bees.—C. N. ABBOTT, *Southall.*

QUEEN-REARING.

[399.] In your article of the 17th June, on this subject, there is one part that I cannot agree with. I refer to that portion in which you suggest the desirability of requeening colonies and superseding queens after the second year, saying, '*They are very little use after the end of the second year.*' In addition to my own experience of some thirty-five years, the necessity or advisability of this course is against the written opinion of several prominent American bee-keepers, whose replies to a question of this sort in the *American Bee Journal* I copy below. I am induced to make these remarks, feeling, as I do, that the present tendency of 'modern' bee-keepers is to meddle and 'manipulate' their colonies of bees a great deal too much, to the discomfort and injury of the bees, and to their own disadvantage in the amount of honey obtained.

My experience tells me that there are many things that bees do much better than we can; and I think this, the superseding of worn-out queens, is one that if left to themselves they will do at the right time. If a queen during her second year has been as prolific as we could expect her to be and has shown no signs of want of vigour, it appears to be a cruel as well as an unwise thing to depose her to put a young and untried, artificially bred queen in her place.

I can quite understand that queens artificially raised and introduced in the autumn might be worn out at the end of the second, or even the first year; but I do not believe, as a rule, that queens which have been reared during the swarming impulse in the natural way in strong colonies are worn out at the end of the second, or even the third season. When, from any cause, a queen ceases to be prolific the bees themselves will generally supersede her. It is my opinion that more queens are damaged during these frequent '*manipulations*' than in any other way, or than we have any idea of. There are many causes that will account for the weakness of a stock besides the shortcomings of the queen, such as long confinement, inferior food, cold, insufficiency of food, &c.; but if the bees are confined to only just as many frames as they can cover, and are judiciously managed and fed, spreading the brood, and adding fresh combs as fast as the bees are raised to cover them, but not faster, they will often be as strong by the time the honey glut comes, and store as much honey as any. If colonies continued weak after proper stimulative treatment then it may in some cases be right to requeen, but these cases are the exception. I would say, Do not supersede a queen on account of her age until she has actually shown her inability to keep up the strength of the colony.

Superseding Queens.—Question: '*Is it advisable to let a queen become more than two years old before superseding her with a young queen?*'—Professor A. J. Cook answers: 'Yes, if she retains her fecundity. Prolificness, not age, should be the test.' W. Z. Hutchinson says: 'Yes, I believe that, as a general thing, the bees supersede a queen when she begins to fail.' Charles Dadant & Son reply: 'Yes, for she is very good in her third year, usually.' G. M. Doolittle says: 'I never supersede a queen until she becomes unprolific, as many of my queens are as good as ever at four years old. In fact the Italians rarely let a queen get unprolific, as they do their own superseding before she becomes so.' G. W. Demaree answers: 'After experimenting in this direction for several years, I now decidedly prefer to leave it to the bees to decide when their queens are worn out. As a general thing, the bees will make fewer mistakes in directing this delicate matter than the wisest apiarist is likely to make. I have had several queens that could not have been bought at twenty-five dollars when three years old, and one queen that fifty dollars would not have caused her to change hands at four years old.' James Heddon replies: 'Queens three and four years old are good to breed from, though they are not as prolific, as a rule, as are young queens. For comb-honey production we need either prolific queens or smaller or contracted hives. It is more profitable to adjust your hive system to your average queens than to practise superseding.' J. E. Pond, jun.: 'I never supersede a nice queen, no matter how old, until she shows signs of failing powers. We want queens for the eggs they lay, and for that reason power of production, and not age, is the rule to follow. I would not keep a young queen a moment if she did not lay up to a fair average. I have a queen now, five years old, that is as prolific as ever she was, and I see no reason why her age injures her in any degree whatever.' H. Boardman says: 'Supersede queens only when they show signs of decline.'

The authorities whose opinions are quoted are gentlemen who look for profit, and are the owners of hundreds of stocks of bees, whose opinions on this and other matters we are bound to respect, on account of the vast experience they have had. To use an American expression, I would say, 'Go slow' in superseding queens after the second year.—JOHN M. HOOKER.

AFRICAN QUEEN.

[400.] Your readers will be sorry to hear that I have another failure to record. On June 10th I received another African queen, a Kaffir, as Dr. Stroud called her. When I opened the hive, all the bees were dead except the queen and six worker-bees, and they were only just alive. As I was afraid to cage her, I put her and the worker-bees with a bar of brood and another of honey in a small nucleus hive, closed them up, allowing plenty of ventilation, and put the hive in an orchid house, the temperature of which was not allowed to go below 70°, hoping the brood would hatch out. However, when I looked at them next day, there were only a few bees hatched out, so I placed the queen and the workers in a hive, dividing a part of it by perforated zinc, and placed an artificial swarm in the other part of the hive with some brood.

I cut all the queen-cells as soon as they were formed, and after forty-eight hours I introduced the queen on a comb of unsealed honey, having sprinkled the two adjoining combs with syrup. But when I looked at the hive again the bees had balled her, so I re-caged her in a pipe-cover cage. The cage not being securely fixed, the weight of the bees loosened it, and they balled her again, and in trying to get her out she took wing, and I found her near one of the other hives. I re-caged her, and tied the cage on to the bar, and kept her caged for four days more, cutting out the queen-cells that had been formed. She was alive, and seemed to be very strong, and on June 17, about six p.m., I released her from the cage, and saw her run down the comb. I watched the hive carefully for a quarter of an hour, as well as the other hives in my garden, but when I opened the hive I could not see a vestige of her, and I have not seen her since; and I examined carefully to see if I had accidentally killed her in putting the bar back into the hive, but what became of her is a mystery to me. I may mention that I had the help of another pair of eyes, and though both of us looked carefully at the bars and the hive, neither of us could see her. It is quite possible that she took flight when I was examining the hive the second time; and I wish now—too late!—that I had cut her wing. I gave the bees another bar of brood in the morning, and they made several queen-cells.

It is an old saying, that we learn more from our failures than our successes, but I am very sorry that after all the trouble Dr. Stroud has taken, that such a disaster should have happened. In his letter to me after the sad news of the death of the Zulu, he wished me to keep the next queen and the workers together till she had begun to lay eggs; but this plan was hopeless with only six workers.

There are so many infallible (?) ways of introducing queens, but we so seldom hear when these so-called infallible ways break down, that I think it would be of use to all of us bee-keepers, if the *Journal* would invite criticisms from our grave and reverend (laity and clergy) signiors on this subject.

In the *Journal of Horticulture* 'A Hallamshire Bee-keeper' propounds a perfect way, and, to use a schoolboy expression, drops on 'A Surreyshire Bee-keeper,' who, it seems, is a member of the B.B.K.A., but who evidently knows nothing of the subject according to 'A. H. B.' can you tell me, of course confidentially, who 'A. S. B.' is? The plan to do is to keep the bees without a queen or eggs for two days, and then let the queen run in, when they will take to her at once?

Is this the cure for all our woes? Is there balm in Gilead? Tell me truly I implore, don't,—oh don't say 'Nevermore.' —GEO. WALKER, *Wimbledon.*

BALEARIC QUEEN.

[401.] I think I once promised to send you one of our Minorcan queens. At any rate, I send you one this day, about a month old, and which has been laying for over three weeks, so that some of her progeny have already hatched. It is descended from my best hive—a splendid hive which yielded fifty full sections by the middle of May, and would have still done better had I not been such a novice. It belongs to our smaller and more active class of bees, preferred by the natives and called by them *Moriscas*, thus denoting an African origin, though I incline to the opinion that it may be Ligurian, having many of the characteristics of the Italians, though of a darker hue. You would greatly oblige us by giving our queen a fair trial in England. The race is hardy, gentle, a great worker and breeder, and from the parent hive I had to cut out and destroy nearly *two hundred* queen-cells a month and a half ago. 'Mother and child are doing very well,' the parent hive also working in supers and having filled most of the brood frames with honey. The natives are greatly astonished at the beautiful and plentiful section honey—something never before seen in Spain. My English hives and supers are the general topic of conversation. I hope my young queen will reach you in safety.—F. C. ANDREW, *Minorca.*

[We are very sorry to say that our correspondent's hopes were not realised, and that before the queen reached her destination she was dead. This arose from the want of observance of the conditions under which a queen in her state should have been packed. We have written to our correspondent, and have given full instructions as to the best mode of forwarding queens, and we hope to hear further of this interesting variety of bees.—ED.]

TRANSPORT OF HUMBLE-BEES TO NEW ZEALAND.

[402.] As the subject of the transport of Humble-bees to New Zealand has been more than once alluded to in your *Journal*, I think the following account of their successful introduction into the colony may prove of interest to your readers.

In the summer of 1883 I was requested by the Acclimatisation Society of Christchurch, New Zealand (of which Society I am a life member), to endeavour to send them nests of live Humble-bees. Upon this I consulted Sir John Lubbock and Mr. J. W. Dunning (then President of the Entomological Society of London), and I secured the services of Mr. S. J. Baldwin, Expert of the British Bee-keepers' Association, to assist me in carrying out the experiment.

The plan we adopted was this. We advertised in November and December for Humble-bees at 1s. each, so as to obtain only the impregnated queens that had already gone into winter quarters. We obtained fifty-five bees only; these were packed in dry moss and sent to New Zealand in December, 1883, and January, 1884, but they all died on the voyage. It is probable that the temperature of the freezing-chambers on board ship was too cold for the bees, and the air too dry.

In the autumn of 1884 we made another attempt. Our advertisements brought in bees freely; we obtained more than five hundred Humble-bees in good condition. We constructed special ice-safes about three feet square, with a chamber for ice that required filling up about once a-week. This we found by experiment would keep

the central space (about one foot square) at a temperature of from 35° to 40° Fahr. In this central space the bees were packed in little trays in *wet* moss, forty or fifty in a tray, as they show no inclination to fight; and arrangements were made for a moderate amount of downward ventilation, and also to drain away the melted ice.

One lot (282 bees) was shipped 20th November, 1884, in the Ss. *Tongariro;* the second lot (260 bees) on 17th December, 1884, in the Ss. *Aorangi*. These ships belong to the New Zealand Shipping Company, who not only carried out the bees free of cost, but also supplied ice, and rendered us every assistance in their power. Of the first shipment forty-eight bees arrived alive; of the second, forty-nine. These bees were set free near Christchurch on the 8th January, 1885, and 5th February, 1885.

I have now received the report of Mr. S. C. Farr. the Hon. Sec. of the Acclimatisation Society, dated May 1, 1886, and he informs me that although many nests were destroyed through ignorance, curiosity, and mere mischief, the bees have increased in the most amazing manner; 'their number is legion,' and they abound over a radius of about one hundred miles from Christchurch. In several cases the farmers have reported to the Society that their red clover is full of seed, so that the bees are already proving their usefulness.

In reading the above account you must bear in mind that in New Zealand the seasons are reversed. January there corresponds to our July. Christchurch is now in a position to supply Humble-bees to all the Australian Colonies. The indirect results of the introduction of these bees into New Zealand will be watched by naturalists with much interest.—T. Nottidge, *Ashford*.

[We congratulate our correspondent and Mr. Baldwin, and, more especially, our brethren of the great antipodean world, on the success achieved, as related in the above most interesting account. Many former attempts at introducing the Humble-bee to the antipodes have been made, but nearly all have been failures; and whenever a few solitary specimens have been landed, and taken flight, their progeny has never been seen, or heard of, so far as our knowledge goes; but when it can be said that 'Humble-bees abound over a radius of 100 miles from Christchurch,' and that 'farmers are reporting their red clover full of seed'—which, it should be borne in mind, has never in New Zealand produced seed before—we may fairly consider the introduction an unqualified success; and we think Mr. Nottidge is fully entitled to the reward spoken of as offered, in our columns, some time back, but which proved on inquiry to be without foundation.—Ed.]

COMB-FOUNDATION.

[403.] Just a line to say what my bees did with six bars of foundation in nine days in one of Messrs. Abbott's Combination hives, which I should like to know whether any bee-keeper has experienced the like. The bees which I have alluded to were a swarm from a straw skep—a few skeps which I propose to keep, as I presume they swarm earlier. After shaking them into a straw skep, I put them into my bar-frame hive at the top, and covering them over with four quilts (hemp carpets), all went well up to the fourth day. The other four days circumstances would not permit me to open the hive, but on the ninth day I opened it, and what a sight it was! Five sheets, all in small pieces, the largest piece about the size of one's hand, all in one ball fastened to the floor-board, and partly sealed over. The other sheet the bees were busy cutting away at the top, and had succeeded in getting half way through. This sheet was No. 1 from the entrance. The bees had built comb, and eggs were in it. I presume there must be a mistake with the foundation. Herewith is a sheet for your examination, No. 1. Having seen another hive with the same class of foundation, I found the bees had cut it away at the top, and would have nothing to do with it at any price; of course, if they say nay, I must. I have put sheets by another maker in the hive, and I hope the bees will take to them. I have done all the above only with smoker charged with hemp carpet. A couple of puffs at the entrance, and three across frames, and was not stung once. The bees are English.—F. C. L., *Devon*.

[There evidently was some grave 'mistake' in the foundation; we have requested Mr. Hehner, the analyst, to examine it. Wax is imported into our markets from almost every part of the globe. It is difficult, if not impossible, for the purchaser to discover from what country it has been brought, or from what flowers it has been secreted. Your bees have given decisive proof of their antipathy to it; for which, from their point of view, they had doubtless good and sufficient reason. You have acted wisely, we consider, in following the example shown by the bees, discarding the rejected foundation, and substituting that of another maker.—Ed.]

TOM-TIT AND BEES.

[404.] I, for one, cannot bring my mind to acquit the tom-tit, nor even to give him the benefit of a doubt, as 'A. E. B. Hill' so earnestly pleads, as on the other side I have carefully watched his depredations, especially in the spring of 1885, among our domestic bees, and on the roof of one hive alone, have counted as many as thirty-five heads off the worker bees that he has left from one morning's meal. I have *seen* them on the flight-boards, snapping up the bees and then flying on to the hive roof, or a small apple-tree that was close at hand, and where I often sent them a meal in the form of No. 10 shot, their bodies I suspended from the branches as a warning, but it was no use, as they have the impudence of Hector, and were at the hives again as soon as I went away. They most assuredly weakened three of my stocks in that year with their continual robbing, and I, for one, most certainly class them as one of the greatest enemies of our domestic bee.—G. H. G., *Bromsgrove, Worcestershire*.

TOM-TITS CAUGHT IN THE ACT. (387).

[405.] Mr. Alfred E. Booker Hill, pleading for his little friends (or enemies) the tomtits, thinks he has conclusively proved that they are not bee enemies at all, at all. My experience is just the reverse. This spring I saw some tits flying backwards and forwards from a plum-tree to my hives. Thinking they could not be after anything but bees, I shot one and had it opened, and there were the bees in its crop; so I have continued to shoot them since, and shall as long as I keep bees.—Bee Protector, *June* 14.

LECTURING TOUR IN NORTH WALES.

North Wales Bee-keepers' Association.

[406.] In my last I gave an account of our journey along the north coast of Wales, finishing off at Llandudno on the Saturday night. Staying in that fashionable watering-place until Monday morning, we packed our appliances, baggage, and ourselves into the train for Conway, where carriages were awaiting to take us on to Roe Wen, at which place we arrived at mid-day, and were hospitably entertained by a gentleman living about two miles from the village. The lecture here was a great success. Although only a little mountain village, there were over 150 present; in fact, the schoolroom was packed very uncomfortably close, especially for the audience. Great interest was evinced, and the superiority of the modern system of bee-keeping was uni-

versally approved. At this village the first difficulty was experienced of my inability to speak Welsh, as three-fourths of the audience were unable to speak English; but this was surmounted very ably by Mr. Hughes, who on this occasion acted as interpreter. On the next day, my morning was well occupied in visiting the bee-keepers (killers) of the neighbourhood, cutting holes in the tops of their skeps, and putting supers on.

The next move was to Llanwryst, the market-town of the mountains; the drive here was comparatively easy, as the road led along the valley of the Conway, but it rained in torrents, swelling the mountain streams which leapt down from rock to rock at many points all along our road. The lecture was very well attended, the Town Hall, where it was held, being well filled. English was spoken and understood here, except in a few instances, in such cases being interpreted by Mr. Davies, Hon. Sec. of the Association. At this town, I met with the most striking instance possible of the vast amount of good and useful information contained in the pages of the *British Bee Journal*. A very intelligent young man, working in a tannery, three years ago conceived the idea of keeping his bees in a more profitable and humane manner, and hearing of the existence of this *Journal*, became a regular subscriber, and from the information he thus gathered entirely from its pages, has become the most successful bee-keeper in North Wales. He had no one to assist him, no lecturer to give him any information, no bee-keeping friend to compare notes with; but entirely with indefatigable perseverance and the help of the *B. J.* surmounted all the difficulties of modern bee-keeping, and rode down all the prejudices of the old school; and all this in a little stone-flagged yard 21 ft. by 15 ft. in a densely-populated neighbourhood. He took 735 lbs. of splendid coloured honey last year, and has fifteen stocks in bar-frame hives and two in skeps to commence this season with. In this space the regulation 3 ft. apart is impossible; the hives have to be packed with only sufficient room between to allow of the covers being taken off. He allowed me to go over his accounts, but as I think that to publish same would be treading on rather private ground, I will keep that to myself; but suffice to say, it was an exceedingly profitable season with him.

Gwytherin was our next destination; such roads, up one mountain, down another, pushing up behind to assist the horses, mountains rising one above the other all around; in fact, a piece of flat ground as big as a cricket-field could not be seen; but at last we arrived, just in time for tea and a 'brush-up.' Here English was of no use whatever, and I had to 'to take a back seat.' Mr. Davies explained in Welsh the working of frame-hives, supers, &c., and with the assistance of the diagrams I purchased from Mr. Huckle, a very entertaining evening was spent, except by your humble servant, who was unable to understand a word. I called on all the bee-keepers around the neighbourhood next morning, and with the assistance of an interpreter got on famously. As we had arranged for a holiday on this day, we all spent our spare time fly-fishing in the neighbouring streams. The trout, I expect, didn't altogether appreciate the visits of us modern bee-keepers in their neighbourhood.

Pentre Voelas on Friday, and Llangerniews on Saturday, finished up the week. At both of these places success seemed to attend us, as our audiences were large and very attentive.

Spending Sunday at Eglwysfach, the residence of Mr. Davies, on the Conway. Monday I lectured at Maenan, a village on the top of a mountain some four miles away. We had really an overflowing audience here, the lecture being given in English, a description of the uses of the appliances being given by Mr. Berry, the bee-keeper before mentioned at Llanwryst.

Trefrew, on Tuesday, a fashionable salmon-fishing rendezvous. Still the audience kept up in numbers. I fancy our former successes in this direction must have been noised before us, as each succeeding audience seemed larger than the one preceding it. Eglwysfach on Wednesday. Here Mr. Davies allowed me to take a frame from one of his hives and place it in an observatory, with mother, drones, workers, brood, &c. This was a great attraction. It was past midnight when we arrived back from the lecture.

On the next day, Thursday, I bade good-bye to my many bee-keeping friends who had supported me through our wanderings in this wild and mountainous district, proceeding to Wrexham, where I was due to lecture in the evening. It rained as hard as it could all the evening, which of course reduced the numbers of the audience, but those that did come—a good sprinkling of ladies braved the weather—paid the utmost attention through a lecture of two hours duration.

One idea seemed paramount in my thoughts all through the tour in Denbighshire and Carnarvonshire: here is a country splendidly suited for bee-culture, white clover in abundance, even the cottages in many instances being completely covered with cotoneaster, and yet how few bee-keepers! The honey I did see taken from bar-frame hives was simply superb.

I should like publicly to thank all those—and they were numerous—who entertained me at their houses during the three weeks I was 'on the tramp' with such evident appreciation of my endeavours to spread the useful information of modern bee-cultivation.—W. B. Webster, *Wokingham, Berks.*

PITCH OF CELLS.

[407.] The outward slope in the sections forwarded is most marked when worker-cells form the centre with drone-cells at the sides, but combs of uniform sized cells also show this peculiarity. As there are several peculiarities in these combs, I venture to mention them in detail.

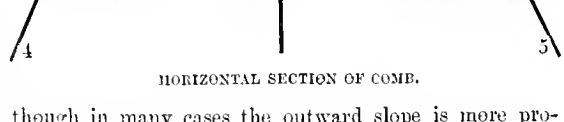
No. 1, D comb, body of cells very much curved, making the pitch at mouth so steep as almost to flatten cells.

No. 2, D comb, started by a piece of natural comb (cut out of frame) placed with a *downward* slope, and continued by the bees with an *upward* one, so as to produce a decided curve, or even an angle, at the point of junction of new and old comb. The cells towards the top are somewhat flattened, and *many* have the lowest side curved so ⌣.

No. 3. At the bottom (below where the guide reaches to) the bees have actually *started* the cells with a *downward* slope on one side of the midrib, curving it upwards towards the mouth.

No. 4. Pitch steep, cells very little curved, herein contrasting with Nos. 1, 2, and 3. Cells drawn out of shape by stretching of foundation, herein contrasting with Nos. 1, 2, and 7, and agreeing with No. 8.

Nos. 4, 5, 6, and 8. Central cells slope upwards, and side ditto outwards. No. 6 was started with scraps, and I suspect had no well-defined midrib. The midrib now runs from one corner to the opposite one. The general plan of the slope of these combs is—



HORIZONTAL SECTION OF COMB.

though in many cases the outward slope is more pronounced than in the above sketch, and they are not all the same slope. Besides combs in which *all* the lines 1,

3, 4, and 5 slope outwards, I frequently have specimens in which one or more of these lines are at right angles to the midrib, and have also cases of their starting from the midrib straight and then curving *outwards*, similarly to the *upward* curve in sections 1, 2, and 3.

No. 7 was started with scraps, and shows flattened cells *sloping towards the centre.*

In uncapping sections, &c., for extracting, I frequently find the face of the comb perfectly dry on the inside, and that a space of about one sixteenth of an inch is left empty at the mouth of each cell. Could you give me the reason for this? If the cappings are wet on the inside, the difference in their outer appearance is, I think, sufficient to enable anyone to distinguish between them and dry cappings, which are of a more striking and purer white.

My bees appear to commence sealing a cell by thickening the lower rim upwards in a sort of crescent shape, and then the crescent grows until the horn meet, and the portion just underneath the point of junction is added last.

I do not know how far it is owing to the dry caps, how far to their reluctance to fill and seal the cells next to the wood (which they seldom do to any extent), how far to the pop-holes at each of the four corners, and how far to the light weight of my honey; but I find that not fifty per cent of my sections scale a full pound when completed, even counting in the weight of the section-boxes. I am a little inclined to suspect the exposure of the honey to the air, caused by the dry-caps, starts fermentation, as some sections we are now using are by no means as well flavoured as some used in the summer, though the same in appearance. Extracted combs, put away for the winter, after being cleaned out by the bees, always absorb moisture from the air with me, and are dripping more or less before spring with a very thin, watery honey. How can I prevent this?—STUDENT.

[We received eight sections to illustrate the above remarks, but owing to the brittleness of the comb they reached us in a very damaged state. We were, however, quite able to see that the difference in the pitch, which our correspondent has shown is due to accident, chiefly, and not design. In some of the specimens, what with the stretching of foundation and the yielding of the comb during construction, the cells have an irregular appearance. In No. 1 we found cells slightly inclined upwards to a certain distance and then a greater slope was adopted as the cells were lengthened out, but we have not seen the flattened cells our correspondent describes as being caused by this. The steep pitch makes the cells appear flattened, because they are seen at an angle; but when the comb is cut down at right angles to the cells these are hexagons and not flattened. In No. 2 the cells are as described, but the flattening of the top cells is due to the compression of the natural comb in fixing, a fact we were able easily to prove in removing the comb and cutting a section of it. It was impossible for the bees to make any other than curved cells at the bottom, seeing that the natural comb was fixed with its cells inclining downwards, and had been continued by the bees with an upward inclination. In No. 3 the foundation was all on one side, so that at the bottom, on one side, the cells were only about a quarter of an inch deep and more than one and a quarter inches deep on the other. It is clear the bees here began working the foundation on one side with an upward inclination, and as the weight of bees pushed the foundation out of the perpendicular line at the same time that the cells were being lengthened, those naturally assumed a curved form. In Nos. 4, 5, 6 and 8, all furnished with worker foundation, the centre cells are worker-cells with an upward slope; but towards the sides, in order to satisfy their desire for drone-brood, there is an attempt made to construct drone-comb, and this being attempted on worker-foundation the result is that the cells have an outward inclination, and many of them are only worker-size at the bottom, and in some cases an attempt has been made to convert two bases of worker-foundation into one drone-cell. The intention of the bees was to make drone-comb; but this was prevented by the presence of worker-foundation. In every instance where the bees have departed from the upward inclination in the specimens of comb sent, it is easy to trace that it is has been from accident and not design.

The bees fill their honey-cells more or less according to the rapidity with which stores are being gathered in. The more the cells are filled the better, to our mind, is the appearance of the comb, although not so white and wax-like. If the extracted combs are well cleaned by the bees they should be quite dry, and not be dripping with watery honey. Our empty combs are usually as dry in the spring as when we put them away in the autumn, after extracting and allowing the bees to clean them.—ED.]

BEES UNDER STATION PLATFORM AT BURTON AGNESS.

[408.] These bees have been there two or three years, and have become so numerous as to be a nuisance to passengers. On having the platform landings taken up, there was a quantity of small holes: the bees were coming out, so we came to the conclusion they were down below in some hollow place, so commenced digging, expecting to come across the swarm, with queen, &c., but without success. On examining the earth, we found several pieces of clay with cells and pollen, also small grubs in them, but could not find anything further; the bees were coming and entering at several crevices of the brickwork, loaded with pollen. I should be glad if you could give any information through your valuable *Journal*—bees and cells sent you same time—respecting the nature of these bees.—M. W. N.

[The bees forwarded are burrowing bees: of the family of *Andrenidæ:* specific name *Andrena Trimmerana.* These being solitary bees, you will not have the opportunity of 'coming across the swarm, queen,' &c. We have frequently described these bees in previous numbers of the *Journal.* We are obliged by the care taken in forwarding the cells and the pellets of pollen, which reached us unbroken, and which we shall have a pleasure in preserving.—ED.]

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[391.] *Removing Wax.* (E. J. Gibbins.)—Nothing better than than running the honey through *fine* muslin. I always attach some on a hoop, and fix same on to tap or valve on extractor.—G. H. G.

[391.] *Removing Wax.* (Edward J. Gibbins.)—Strain it through cheese-cloth, or allow honey to stand and skim it off the top, the skimmings to be placed in a strainer.—W. B. WEBSTER.

[392.] *Anglo-Carniolan Bees.* (Dar.)—Such a cross you would find very gentle.—W. B. WEBSTER.

[392.] *Anglo-Carniolan Bees.* (Dar.)—As easy to manipulate and manage as ordinary blacks. I have several foreign stocks of different races, but find them all about the same, including our native bees; confidence with them is the great thing.—G. H. G.

[393.] *Turning Drones out.* (Blanche.)—Supply of honey being less than the demand required for the workers was the cause. I noticed a few instances of this in my apiary, of workers *worrying* the drones, and a few were turned out. Feeding should have been carried on, as weather was so very unfavourable for bees and little or no forage for them.—G. H. G.

[393.] *Turning Drones Out.* (Blanche.)—The recent cold and unseasonable weather has caused many unorthodox proceedings on the part of the bees; yours is not at all an

isolated case of this description, they had very little stores, and reduced in numbers; they did not want the drones to consume the little they had got and so turned them out.—W. B. Webster.

Queries.

Queries and Answers are inserted free of charge to Correspondents. When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[409.] *Bees in Refuse-heap.*—I have noticed that my bees constantly visit the refuse-heap, ashes, &c., near our backdoor, and have wondered why they do so. Can any reader inform me what they are after?—Inexperience.

[410.] *Difference in Energy in Bees.*—Having four bar-frame hives of bees, one of them I have often noticed seems to work much better than the other three. Is it ever known that any bees are given to idleness, or that some work better than others?—Inexperience.

[411.]—Is clover on which bees work lessened in quality as pasture?—Young Scot.

Echoes from the Hives.

Bromsgrove, Worcestershire, June 15th.—Since my last 'Echo' there is but little improvement in the weather, as we have not had a day pass without rain, the garden beans and raspberries are out in full blossom, and field beans are commencing to show the bloom where the land is in a sheltered position. If we only get nice weather, I do not repine, as we shall have round here a good harvest, I think, where the stocks are strong; as there is abundance of white clover close at hand.—G. H. G.

Sladesbridge, Cornwall, June 18.—The older working bees are strong and bringing in pollen, but very little honey. I have had no swarm this year, the air being cold.—H. Lander.

Honey Cott, Leamington, June 21.—About a fortnight ago, in looking over a hive, on turning up the quilt over a stock covering eight frames placed at right angles to the entrance, which was about five inches long, I found at the back of the dummy under the quilt a queen-wasp, which had begun her nest and laid a circle of eggs. Not thinking of seeing such a thing, I was not prepared to kill her, so she got away. However, in about five minutes she came back, and was marching in at the entrance, when I killed her. The most curious part of it to me was that she went in at the same entrance as the bees, and it being so very cold at the time, I suppose she managed to get in that way without the bees perceiving her. There has been an enormous quantity of queen-wasps round here this spring. I have killed a great many, and have got the boys to kill some scores. With any amount of beans, white clover, and trefoil, and vast quantities of other bee flowers, the bees can make but very poor progress. The weather has been so cold and dull, and the thermometer down to 50°. Oftentimes the bees lay about completely chilled; but they will go out, though many of them never come back. With the longest day here, and mowing having commenced, the prospect of a good honey harvest begins to recede, though of course it is not yet too late to hope it may change for the better.—John Walton.

Cambrian Road, Richmond, June 21.—Since writing my last 'Echo' I have removed from Kingston-on-Thames to Richmond, and not having the same convenience for keeping bees, I sold three hives, taking three with me, which I did successfully, but have lost one during this last winter through dysentery. A fortnight since I put a crate of sections on each, as both hives were crammed with bees and brood; five or six sections had patches of sealed honey in them, left from last year, each of which was speedily cleared out and taken down below, and I see they have at last determined to try and refill them. From an examination of several hives in this district I find they are mostly weak in numbers, with scarcely a quarter of a pound of honey, and, I fear, little or none coming in, the weather here being all against bees—wind mostly N., N.E., and E., cold and dull. They appear to be three weeks later this year than last, but *nil desperandum.*—Herbert Crawley.

Harborne, Birmingham.—No swarms and no honey, and this the 21st of June! Stocks are not so strong as they were a month ago, although I have been feeding regularly. All hives are living from 'hand to mouth;' still, with a fine July, we may get some honey yet.—H. J. Sands.

Springburn, Glasgow, June 17th.—The past month has been on the whole a very backward one in Scotland for bee-keepers generally. As I write, the weather seems to have a brighter prospect, and the bee-keeper who has his stocks strong in bees can do much yet before the month closes, should the sunshine continue, as has been the past few days. Speaking from the correspondence I have before me from many eminent bee-keepers in most districts in Scotland, and specially the south, there is every reason to believe that the season will prove a good one, and fully up to last. My four stocks of bees which are located, with my brothers' in Glenluce, are doing well. Careful observation has proved to me that bee-keeping cannot be made a success within four miles of Glasgow. Many are now busy preparing for the honey glut, which must set in should sunshine prevail. I wish the *B. B. Journal* continued success.—John D. McNally.

Bray, Co. Wicklow, June 15th.—This has been the worst season for bees for the past six years. The strongest hives, although crowding the sections, do not gather sufficient honey to do any work, the foundation being almost as it was when the supers were put in three weeks ago.—E. D'O.

Nyon, June 17.—One of my Cyprians (home-bred queen) has already thrown off four swarms (one 2 kilos, 900 grs., one 2 kilos, 600 grs., one 2 kilos, 500 grs., and one 500 grs.*). It had two upper storeys, and was crammed with bees, and as there was very little honey I did not wish to increase the space any more. I am glad to have these swarms to supply me with good young queens. I found seventy to eighty queen-cells, hatched and not hatched. Swarms had three and four queens, which I gave to pupil visitors. Yesterday I distributed ten hatching queens (some came out of their cells in my hands) to five *curés* from Gex, who came to see me. This abundance of queen-cells is quite the usual thing with these races, but the strength of my Cyprian colonies and their activity is remarkable.—Ed. Bertrand.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Alpha.—1. The British Bee-keepers' Association was established in June 1874. 2. The schedules of prizes of various shows in the year 1877 contained the rule adverted to.

Inquirer.—By this time the bees have settled the matter of the queens. You may rest satisfied that one queen has been left in the hive. The casts have come forth in natural sequence, and we should expect that by this time another has been added to those recorded. The hive must have been headed by a very prolific queen to have sent forth so large a swarm as to weigh eight pounds, besides so many casts.

James Houston.—The bee is an *Andrena fulva.*

H. Lander.—The bees are affected with the disease which has received the name of *Bacillus Gaytoni*, or *depilis.* We should recommend the use of salicylic acid solution.

W. B.—*Removing Wax from Clothing.*—Saturate the part with turpentine and rub with clean flannel until the solution of wax in turpentine is all removed. Repeat the operation until no more wax remains.

* 6½ lbs., 5 lbs. 10 oz., 5½ lbs., and 1½ lbs.—Ed.

J. B. S.—1. *Match-boards for Hives.*—There can be no objection to this material. It is cheap and generally well seasoned. 2. *Strengthening Stocks.*—It depends upon circumstances whether to shake the bees off or not. If the weak stock is very short of bees, they would be unable to cover the added brood, which might be chilled. In this case add the bees with the brood. If not required, it is as well to shake them off. 3. *Transferring.*—Reject all drone combs, whether containing brood or not. 4. *Carniolans.*—The tongues of these are not long enough to reach the nectaries of red clover.

H. W.—*Transferring Bees from Box.*—Smoke them and break up the box by opening the joints. Take out the combs one by one, brush the bees off and tie them into the frames. Preserve all combs containing worker-brood, but discard all drone-combs. Do it at once. By your proposed plan you would lose all the brood, which would not do at all.

J. W.—*Bees in Skep hanging out.*—They usually hang out for a few days before swarming. If not swarmed by the time you see this, drive a swarm and hive it in the bar-frame hive. If at the same time you transfer the combs from the skep to another frame-hive, you can cut out all the queen-cells except one (be careful you do not injure this one in transferring) to prevent a cast. If you have other stocks, drive out all the bees for the swarm and place the stock on the stand of another, removing that other to a fresh stand.

E. D'O.—The comb is not affected with foul brood. The brood has been chilled.

W. G. C.—The queen forwarded is the old one. Her wings do not appear to have been effectively clipped.

F. C. G.—*Weak Skeps.*—We should advise you to drive the bees and unite them. Cut out the best and straightest combs of brood, and transfer them to the frames of the hive you wish to put them into. The combs should be tied into the frames with two tapes, and they should be in the same position as they were in the skep. As your bees are gathering no honey they should be fed, and building and repairing combs will proceed rapidly. There is plenty of time to make a strong stock before the winter. If you have a preference for either of the queens, destroy the one you least value.

Cymro.—*Four-storeyed Hives.*—In our hives the entrances are cut out of the floor-boards, and not out of the sides of the hives, so that there is not the difficulty with regard to interchanging with the body you mention. We do not see any objection to the entrances except when bees are inclined to rob, and then it is better for them to concentrate the whole of their forces at the entrance.

Rare Sips.—*Increase of Colonies.*—Do not divide your stocks after the end of July at the latest, and then it would be better if you gave the stocks young queens, which you can provide now by dividing one stock, and raising queens in nuclei.

G. T.—1. *Italians on Red Clover.*—Ligurian bees are generally credited with being able to reach the nectaries of red clover, but we have watched fields of it in the neighbourhood of hives of them without seeing any bees upon it. 2. *Old Queens killed.*—There is no doubt that the unseasonable weather is the cause. Swarming being delayed, the young queens hatched out, and there was a battle royal, in which the young and active princesses killed their royal mothers.

W. G. R.—1. *Number of Drones in Strong Hive.*—This depends entirely upon the amount of drone-comb you have permitted to exist. A patch of eight or ten square inches is sufficient, and this would probably allow of 500 or 600 drones. The reason of the drones being turned out is the inclement weather and shortness of income. You had better feed gently until the weather changes. 2. *Number of Sections for Strong Hive.*—A crate of three rows of six or seven sections.

A. B. Turpin.—A bike, or byke, is a Scotch word, denoting a nest or hive of bees, wasps, or ants.

We learn from the *Hazleworth* (Suffolk) *Times* that Mr. H. R. Emms gave an interesting lecture on Bees and Bee-keeping in the Hasleworth Rifle Hall on the 3rd inst. Mr. Emms succeeded in creating a great interest in the subject of bees. As Mr. Emms has kindly promised to help his neighbours in the subject, we feel sure that much progress in bee-keeping will soon be made in that part of Suffolk.

Mason's Fumigator.—We have received from Mr. C. Mason, of Dalkeith, a carbolic fumigator, whose simplicity and cheapness should commend it to the bee-keeping public. It consists of a tin box having pipes at either end, the lower one is inserted in an india-rubber air-ball, which acts as a bellows for expelling the fumes of the carbolic acid solution through the other. It has a loose piece of tin inside, and the pipe projects a quarter of an inch inside, so that there is no possibility of any liquid being blown through the front pipe. Mr. Mason informs us that he offers his invention to any bee-keeper that may desire to make use of it.

New Honey.—An excellent sample of sections,—the first of this year's produce,—has been on sale at Mr. Neighbour's establishment, 149 Regent Street, during the last few days. We understand it was collected in the grounds of the Bee and Fruit Farming Company, at Cray Valley Bee Farm, Hockenden, St. Mary Cray.

Abbott's Patent Frames.—'I found it difficult to press the wedge in Messrs. Abbott's patent frames completely into the groove, until it occurred to me to use a pair of pincers, which act very well and fix it firmly. This hint may be useful to those who may have found a similar difficulty. If the foundation is old it must be previously warmed, otherwise it frequently breaks—especially if the wedge be hammered in.'—L. Williams.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

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Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
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Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

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COMB FOUNDATION.

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Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 22, 23.—Lincolnshire Agricultural Society, Lincoln. Entries close July 5. Secretary, R. R. Godfrey, Grantham.

July 28.—Surrey County Show, Leatherhead. Entries close July 23. Sec., Captain Campbell, Box Grove Road, Guildford.

July 30-August 5.—Great National Show at South Kensington. Entries close June 30th. Secretary, J. Huckle, Kings Langley.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

June 24, 25, 26, 28.—Royal Counties Agricultural Show, Portsmouth. Entries close June 17. Secretary, E. H. Bellairs, Wingfield, Christchurch.

July 14.—Swanmore.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

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'Came across a strong cross-bred stock with a very bad character; they had completely baffled their owner and a man who does a good deal of bee work. I was assured that if I did not wear veil and gloves they would drive me out of the garden. I found that with very slight fumigation they were as quiet as sheep. I used your Fumigator to all bees I visited, and everyone was much pleased with it.
Wilts B.K.A. W. E. B.'

'Your Fumigator answered capitally. I shall not use a smoker again if I can help it; when known it will be universally used.
A. W. L.'

'I shall exhibit your Fumigator, as I think it is a great boon. I shall never use smoke again. W. W.'

'Your Fumigator gives me great satisfaction. I have used it continually, and have quite made up my mind to discard the now—to me—obsolete smoker. A. H.'

'I have the pleasure of bearing the strongest testimony to the value of your Fumigator as a bee-quieter; I have several smokers, one a very good imported Bingham, but not one of these quiets the bees as your Fumigator. Rev. G. A. P.

'The effect of quieting the bees is highly satisfactory; I shall not again use the smoker. A. H.'

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'Find it more effectual for quieting bees than a smoker.'
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THE
BRITISH BEE JOURNAL

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

Letters for Secretary, July 8–15th, should be addressed 10 Trowse Newton, Norwich.

SOUTH KENSINGTON EXHIBITION.

We beg to remind our readers that the entries for this important and representative Show will close on Saturday next, the 10th inst. The entries for hives and appliances are numerous and very satisfactory, and the present fine weather will no doubt contribute materially towards the success of the department allotted to honey. The extension of the time for entries will enable many to enter in the several classes who could not have undertaken to do so had they closed on June 30, as originally arranged. At present we are enabled to report that nine counties have entered for competition in Class 1, viz., Essex, Middlesex, Berkshire, Bucks, Herefordshire, Wiltshire, Norfolk, Herts, and Surrey; one or two other counties have also intimated their intention of competing. The number of entries in this class is, however, by no means satisfactory. The marked absence of Dorsetshire, Devonshire, Lincolnshire, and Sussex, is much to be regretted. We hope something will still be done to have these excellent honey-producing counties represented.

In our next issue we hope to be able to publish the complete list of arrangements for the exhibition itself.

In reply to inquiries respecting the height to which honey may be staged in Class 1, we think the rule is quite clear—*six feet*, exclusive of any ornamental trophy.

THE COMING SHOW.

But three weeks hence, and all bee-keepers will be looking forward with the greatest interest to our South Kensington Show. We use the word 'interest,' as we think this Exhibition cannot fail to prove of much benefit to honey producers of the British Isles. Many may say that individuals will not derive any actual advantage at the time, and so the term must be applied in a collective sense. We cannot do better than go to a bee-hive itself for an illustration. Here we get a community consisting of queen, workers, and drones, and collectively we see what grand results are obtained :

> 'What well
> Appointed commonwealths! where each
> Adds to the stock of happiness for all.
> Wisdom's own forums! Whose professors teach
> Eloquent lessons in their vaulted hall!
> Galleries of art! and schools of industry!
> Stores of rich fragrance! Orchestras of song!
> What marvellous seats of hidden alchymy!
> How oft, when wandering far and erring long,
> Man might learn truth and virtue from the bee.'

But the work of a single bee, how insignificant would it appear! So all should use their energies and assist the Parent Association. To make a representative Show, that will do credit to the B. B. K. A., County Associations should each contribute what they can. For two reasons this will be an important exhibition. In the first place, we are exhibiting side by side with our various brother bee-keepers from the different colonies. This we consider a privilege, and welcome them to our shores. We shall be able to exchange ideas, and compare the various honeys from all parts of the world.

Secondly, such numbers will be visiting the exhibition that the public will be able to see for themselves that British honey will hold its own against the various kinds from all sources, and will observe that British honey is preferable to any other. This latter remark is made in no ill feeling to the Colonists; and they, too, will learn a lesson that it will be no use shipping such large quantities to our shores, as it will prove to them that the British Isles can produce as much, even more, than they can consume. This is simply what has been learnt in our own land; it has been the practice to forward all products to London, overstocking the market and overlooking the demands of those nearer home. It brings to our recollection an incident in a fishmonger's shop, which took place in an important watering-place, when a gentleman was told that if he waited a quarter of an hour the fish would arrive from London. In all probability the same fish had passed through the town the previous night, as it was known that the firm in London from which the man expected the supply had a contract for all the fish caught in a village a short distance from the town. Bee-

keeping would not necessarily diminish in the colonies, but the producers, by creating a demand, would obtain far better prices at home.

This being such an important exhibition, all should try and see it. We feel confident the Committee of the B.B.K.A. will do their best to make it a success.

His Royal Highness the Prince of Wales being President of the Colonial Exhibition, and so far having taken an interest in the Bee Association as to kindly consent to allow the Conservatory to be used for the show, this would be a good opportunity to get his Royal Highness to help forward this national industry by his Royal patronage.

It is a right thing to commemorate such an occasion as the present by giving medals to all the exhibitors; and we might suggest to the Committee that this would be a good time for recognising the services, in some way or other, of those gentlemen who did so much at the commencement of the Bee Movement in this country, and who, in fact, set the ball rolling. It is comparatively easy in the present day, but twelve years ago men who laboured so indefatigably had many obstacles to contend with, and their services should not be forgotten. We hope a meeting may be arranged in the early days of the show when representatives of bee-culture from the colonies will be invited to attend and give us their experience; and we feel sure they will have a hearty welcome from the British bee-keepers.

MR. FRANK BENTON.

All bee-keepers, both in this country and in America, who have watchfully followed the career of this enterprising apiarian, who have noted the various perils through which he has passed, and who have seen his ingenuity and bravery in clearing away the obstacles that have lain in his path, will sympathise with him in his present illness in the isle of Cyprus. The *Canadian Bee Journal* says:—

'We are also informed that those disagreeable quarantine regulations with which they fumigate everything passing through the mails, has prevented the shipping of queens and carrying on the operations as successfully as they could wish. We hope that these objections may soon be removed, and that friend Benton will recover, so that he may carry on his noble work. Any one who sacrifices the comforts of American life for the discomforts of life in the East, in order to carry on the operation of exporting queens, should not only receive the good will of every one who desires them, but deserves to have health and prosperity. We fear Mr. Benton will have to abandon the work or sacrifice his life to the climate of that country, as it is not adapted to Americans, and by the time a person becomes acclimated his constitution would be ruined.'

PACKING HONEY.

The following directions for packing honey have been issued by the Irish Bee-keepers' Association:—

To pack sections, select a box so much deeper than the sections as to allow 1½ in. of packing below all, and ½ in. between and above each layer, with a similar allowance of 1½ in. in length and width. First, carefully level the bottom with soft straw or grass to about 2 in. thick. *Across* this lay thin boards, on which place the sections side by side, and parallel with the sides of the box. The sections must be glazed, and each wrapped separately in white paper. No packing need be put *between* the sections, only round the sides of the box. Spread a sheet of paper over the first layer, lay on a little more straw, or grass, and proceed as before with a second layer. Sections which are not well fastened to the bottom bar must be packed upside down. Convenient ropes or other handles must be provided for the cases, and a large label on the top.

HONEY-COMB.
HANDLE GENTLY.
THIS SIDE UP.

Supers containing several combs are similarly treated; but first secure the combs from lateral motion, by slipping a doubled sheet of note-paper between the combs, and fill up the pocket thus formed pretty firmly with wads of tissue paper, or cotton wool. Such supers must be packed bottom upwards.

Bottles must be each rolled separately in a piece of paper, and packed standing on two inches of straw, with a little of the same between the glasses. Between two layers lay a sheet of cardboard, or thin wood, and fill up with soft material, so that there is no possibility of motion between the jars.

USEFUL HINTS.

During an experience of over forty years we do not recollect a season more unfavourable to the bee-keeper than the present. Summers, in which rain fell on almost every day, interspersed with fitful gleams of sunshine, indeed almost honeyless seasons, wherein it was impossible for the bees to store a surplus, and scarcely to live from hand to mouth, we do remember; but a season so sunless, with prevailing cold north and east winds, blowing almost continuously from November up to the 21st of June, we cannot call to mind.

The results to many apiarists, especially to the uninitiated, have been most disastrous. In the larger apiaries of most, whether professional or amateurs, feeding, up to the longest day, has been simply a matter of necessity; and this, too, has its unfavourable side, since the excitement caused by supplying food has tempted the bees to sally forth in search of water, pollen, and boney, to their own destruction; and many a colony, brought up to honey-collecting strength a month or six weeks ago, is now in pitiable plight from depletion of its population and the attendant evil of *chilled brood*. In our own district this evil has been very prevalent, in some cases leading on to foul brood. The queens, stimulated to egg-laying by syrup-feeding or the uncapping of comb honey, have produced more brood than the bees could well cover, while the speedy dwindling of the latter (caused sometimes by robbing, as well as foraging) has left whole sheets of unsealed larvæ to perish and rot—a meet hot-bed for the reception of *bacilli*, or foul-brood germs.

In several cases we have found fine queens with distended ovaries, accompanied by about a dozen bees, on three or four frames of putrefying larvæ, without any of the odour, so well known to the practised expert, of foul brood. Is not this chilled brood often mistaken for foul brood?

Bacillus Alvei.—Seeing that in our lengthened probation we have never experienced, in our own apiary, a single case of foul brood, and that 'It is a long lane that has no turning,' we have not been above guarding against an attack, and for some time back have kept a piece of camphor in all our hives. In feeding, too, we always use the prescribed dose of salicylic acid, or phenol, and we have found no difficulty in getting the bees to take the latter. Last season we cured a bad

case of foul brood by the use of phenolated syrup of the strength prescribed by Mr. Cheshire. Instead of giving the food from a feeder, the bees were brushed off each comb, into the cells of which was injected the prepared syrup by means of 'Cooper's Patent Protector'—a powerful spray disperser, very similar to a cheaper, and equally efficient, article supplied by Mr. Meadows of Syston. About three days afterwards the process was repeated, and the colony placed in a retired garden, remote from other apiaries, where it remained from the end of June until October following, when it was found to have increased in population considerably, all signs of the foul disease being eradicated, and it passed through the winter well. This case was clearly traced to a colony driven, the previous autumn, from the rotten skep of a neighbouring cottager.

Contracting Brood-nest.—Where hives are worked for comb-honey it is well to limit the brood-nest to about eight frames. This will cause work to be carried on with greater energy in the supers, and the queen's power of ovipositing will be economised for a more suitable opportunity, inasmuch as bees bred in the month of July or the early part of August are useless as honey-gatherers, and do not live through the winter. But when supers are removed, and the queen is stimulated to recommence her maternal duties—say from the end of August throughout September—the offspring then produced is of untold value, existing through the winter well into the following spring.

Weak Colonies.—In our department, 'Useful Hints,' instead of saying, 'Do so and so, at such a time, &c.,' we much prefer, whenever practicable, to give examples of the work done in our own or other apiaries, with the results thereof, believing that the advice suggested thereby will appear less dictatorial and more practical. As regards weak colonies therefore, wherever such exist at this advanced season, or three or four-frame nuclei, with prolific laying queens at their head, we relate our own doings during the last week. Having seven of such small colonies and nuclei, on a brilliant day, about midday, we caged the queen in each under a pipe-cover cage, and placed the three or four frames of bees, brood, and caged queen, in the centre of a ten-frame hive, filling up the side spaces with frames of empty comb reserved for the purpose. Each hive thus prepared was then made to change places with a fairly populous ten-frame colony from another part of our apiary.

The flying bees of these latter colonies, amounting to a moderate swarm, were thus added to the weak hives, and the depleted colonies, being full of brood, are quickly recuperating, will be prevented from swarming, and, weather permitting, will give a fair quantity of extracted honey, as will also the smaller colonies which supplanted them. On the following day at noon—twenty-four hours after performing the above operation—the queens were liberated from their cages, and were all accepted. Two days afterwards these hives were again examined, when the queens were found laying freely, the hives were crowded with bees, and honey was already stored in the outside frames. In several of the hives a little fighting took place, and a handful or two of bees perished—just sufficient to show that if the queens had been unprotected their lives would have been endangered. It was not considered necessary to cage the queens of the stronger colonies when removing them, since the flying bees of the nuclei were so small in number that they were taken no account of, the population of a ten-frame hive being considered sufficient to render an account of these, if evilly disposed. Still the *quite safe* plan would have been to cage these queens also.

Queen Introduction.—The pipe-cover cages we use are of open wire work of German manufacture (since we were unable to procure them made in England, although we tried in all our principal towns), and are beautifully woven after the pattern of those used by the late Mr. Woodbury, except that they are twice as large, the diameter being 1¼ inches, and when screwed up to the mid-rib of the comb, fit nicely between two combs. We have introduced hundreds of queens by means of this cage, and without loss.

Honey Prospects, we fear, are anything but good. The meadows, alas! are mown, the wheat is in full bloom, the white clover is dying off for want of rain, the second crops of red clover are likely to be nil; and from what plants, or trees, are our bees to obtain their surplus? The limes and the heather are our only remaining resources. Therefore, let those who are within reach of the heather get their bees into full condition for reaping the plentiful and superb honey yielded by this plant in the fine and sunny months of August and September. To our own taste there is no honey equal to the pure heather section-honey. We do not anticipate seeing 1-lb. sections at last year's prices of 6*d.* to 9*d.* each, and shall not be surprised to find them quoted at from 1*s.* to 2*s.* Extracted honey will never compete in price with section-comb, the quality being more uncertain, although the quantity may be in excess.

Beans and mustard, although waning, are still supplying a fair yield; and if we are so fortunate as to obtain speedily copious showers, we may anticipate a further supply from white clover, and second red.

Doubling.—Those who have practised doubling will reap a better harvest than those who have worked for comb honey, and will have escaped, to a considerable extent, unwished-for swarming.

Our doubled hives have all done, and are doing, best this season. One colony, occupying three ten-frame hives, all of which it has filled, swarmed the other day from want of room, leaving the greater part of its honey uncapped, but on being returned, and a fourth hive given, it remains quietly at home working to its heart's content. We have heard only of six 1-lb. sections being completed in this neighbourhood, and the term *honey* show will certainly be a misnomer, hereabouts, as regards section-honey.

Shading Swarms must not be neglected. Where there is no natural shade, such as that afforded by trees, the covers of hives should be slightly raised, to allow the air to pass between the hive and its cover, and a few leafy branches laid over the cover; the hive also should be raised a quarter of an inch from its floor-board, all round, to admit air, and so to prevent the melting and falling of the newly-built combs.

This is a *very* important matter, and must by no means be neglected. With the thermometer at 90° Fahr. in the shade, as it was a few days with us, we expect to hear of combs falling, whether built on foundation or without, excepting the wired, which, in our experience, no matter how hot the weather, never breaks or falls. Many a colony has been destroyed, in its close warm skep, without the owner even suspecting the cause, by the falling of the combs.

We have seen the newly-gathered honey streaming from the newly-built combs, and pouring through the entrances, while the owner—poor man—simply imagined that the hive was too full to hold more, and so a little must needs run to waste!

Removing Sections.—Happy are they to whom this task is assigned! Let them take 2 oz. of ordinary carbolic acid, mix it in a quart of warm water, and in this solution steep a piece of calico, sufficiently large to cover the top of the section-case. Having wrung out the cloth as dry as possible, about noon on a fine day, remove the covering of the section-case and apply the cloth. The few bees at home will beat a hasty retreat below, and the case entire may be removed into an out-house, or spare-room, where the sections may be separated and stored. In case a few bees are found brush them off the sections with a feather, through the window, or door. This plan is far better than endeavouring to remove the sections,

one by one, from the case as it stands upon the hive, in which attempt sundry of our acquaintances have been badly stung. A shady nook will do equally as well as an out-house, or a room.

THE VARIOUS RACES OF BEES.—After some years of experience with all the races, pure and crossed, we prefer the hybrids from the Cyprian and Italian cross, and those from the Syrian and Carniolan cross. Both these hybrids are splendid workers, very prolific, winter well, and are most gentle, and easily handled, keeping well to their combs when under inspection, and showing but little excitement. The Syro-Carniolans are the largest, and, of course, the darkest bees. With numerous colonies of black bees surrounding our apiary within a radius of three miles, our forty hives of the yellow races and their crosses hold their own; and it is a difficult matter to 'spot' a purely black bee amongst the whole. The purchasers of our sections, too, will, we think, testify to their quality and appearance being equal to any produced by the black race.

We consider that Mr. Benton has conferred the greatest boon possible on bee-keepers in general by his introduction of the Eastern and Carniolan races into this country and America, and deeply do we regret his serious illness. To one who has sacrificed health—and it may be even life itself—for the benefit of our fraternity, we consider a deep debt of gratitude to be due, and should be rejoiced to see a subscription list opened on his behalf. What better opportunity could be offered than the present during the visit of our Colonial friends to the old country?

We have been greatly interested by the attempt of Dr. Stroud to introduce the South African bee to English apiaries, and also by that of Mr. F. C. Andrew to give us his 'Minorca Bee.' Surely in these days of advanced apiculture and apiarist experts there ought to be no difficulty in introducing a foreign queen to an English colony! One almost blushes to hear of failures where *queen introduction* ought to be, and certainly may be, rendered a matter of certainty.

Are our certificated experts practised in the different methods of queen introduction, and put through the various manipulations necessary thereto, before their certificates are granted? If not, why not? *Floreat Apicultura.* Why has not our Association a motto? and why has not the *British Bee Journal* one also?

Foreign.

FRANCE.

According to the reports published in a recent number of the *Apiculteur* of Paris, bees have made considerable progress throughout France in the course of last month, when the weather, as in Italy, favoured them in several respects. The copious showers of rain, which became pretty general about the middle of the month, were most beneficial to sainfoin and red clover, as they were just on the point of flowering. These are now affording good pasture to bees, particularly on the gravelly lands near Paris. In the eastern provinces of France, things did not proceed, however, so favourably, as the weather there became unusually cold at the end of April and beginning of May, with frosty nights, thus retarding vegetation to an extent that bees had to be fed.

Monsieur Hamet, editor of the *Apiculteur*, whose serious illness was recently mentioned in our columns, was so far recovered a little while ago, that he had decided to resume his classes at his practical school in the Luxemburg Gardens. On his way thither, however, and while still near his residence, he was run over by a carriage, a wheel of which passed over his left leg, without, however, breaking any bones. He had to be taken home in a cab and compelled to keep quiet for about eighteen days. He has now been able, although with evident difficulty, to resume his school duties, and there is every hope of an early recovery.

CANADA.

The season here promises to be an exceptionally good one. My first swarm was cast on May 29th. Bees are now in excellent condition for white clover, which is the source from which we generally derive our first surplus honey. Of late years the attention of bee-keepers has been directed to alsike clover as a honey-producing plant. It is surer than white, being apparently less readily effected by draught and other climatic influences, and when the bees have the privilege of choosing between the two clovers they invariably forsake the white and frequent the alsike. In Canada our implements for the apiary are very varied, for a hive has to be found—the old box without any frames, but happily these are becoming rare, and for a moveable frame-hive we have almost innumerable sized frames and designs of hives themselves. Some advocate that the deep frame is more advantageous for wintering, others the contrary. Everything well considered it appears to be difficult to substantiate any argument why the one should be superior to the other, and still more to show practically that any difference in results in wintering has been owing to the different-sized frames. It is to be regretted that so many varieties exist in hives, they are largely a needless expense and trouble alike to the apiarist and the supply-dealers.

Canada is thoroughly up to the times in all implements of the apiary; besides adopting whatever is useful from other lands she is not idle herself in the field of research. Theory and practice work hand in hand, in a large measure. Amongst the most scientific bee-keepers is Mr. S. Corneil, of Lindsay, also an apiarist of large practical experience, who contemplates visiting the Colonial and Indian Exhibition. We are indebted to him for throwing light and unravelling many of our nicer, *finer* points in bee-keeping. Mr. Corneil experiments carefully, and being both a practical bee-keeper and a scientist he naturally occupies a position, and his results can be relied upon above the ordinary bee-keeper. —R. P. HOLTERMANN, *Brantford, Canada, June 10th.*

AUGUST, BARON VON BERLEPSCH.

HIS AUTOBIOGRAPHY, SUPPLEMENTED BY C. J. H. GRAVENHORST.

August, Baron von Berlepsch, was born at Seebach, near Langensalza in Thuringia, on the 28th June, 1815. Being a precocious boy he made up his mind while still a pupil of the Gymnasium (High School), to study ancient classic philology, but his father objected and compelled him to study jurisprudence. He became reconciled to the science of law at the Universities which he attended, in so far as to study corpus juris industriously, and with philosophical exactness. But his father further insisted on his practising law in the hope of seeing his son some day become Minister of Justice. The dull routine of work, however, disgusted the young lawyer in a few years, in consequence of which he quitted the law and devoted his time to scientific studies in Munich until the death of his father, which occurred in 1841. From 1841 till 1858 he lived on the family estate of Seebach, occupying himself with bee-keeping, pomology, and his favourite study of classic philology. From 1858 to December 1866, when he married at the advanced age of fifty-one, he resided at Gotha, and from that time he and his wife had a most happy home at Coburg.

I have the original of the above memoir before me, being in the handwriting of the Baron's well-known consort, Lady Lina von Berlepsch, who is also an authoress on apiculture. The Baron either dictated to his

wife this biographical sketch or communicated it to her for the purpose of having it written down. The words interlined in the printed text are additions made by the Baron himself. This memoir dated from the year 1868 when I published an article in the *Gartenlaube* headed 'The Leaders of German Bee-keepers,' with the likenesses of Dr. Dzierzon, Von Berlepsch, Kleine and Von Siebold, accompanied by biographical notes. Before compiling this article I applied for the particulars to Von Berlepsch with whom I was in active correspondence at that time.'

Baron von Berlepsch took an interest in bees when still a child, and even kept a few hives when at the University. On his taking possession of the estate of Seebach, it was his intention to give special attention to bee-keeping, for which purpose he established a large apiary there. He first used hives with immoveable combs. When at that time Dr. Dzierzon invented hives with moveable combs, he watched with the greatest concern this revolution in apiculture and declared it to be a calamity which would do a great deal of injury to bee-keeping. However, he paid a visit to Dzierzon, and having convinced himself of the correctness of the method of the latter, he became a warm supporter of Dzierzon's theory which had hitherto been strongly opposed by him; he, indeed, became the most zealous advocate of the hive with moveable combs; and his letters on apiculture which appeared in the *Eichstadt Bienenzeitung* and which silenced Dzierzon's opponents, largely contributed to the success of the new system. That Von Berlepsch carried out a great many valuable investigations in regard to the economy of bees, and that he is the inventor of the frames and of the so-called Berlepsch hive and the pavilions, are well-known facts.

In 1858 he parted with his Seebach estate to his brother and gave up bee-keeping, but he continued to take a deep interest in bees up to the time of his death. From Coburg he removed to Munich, where he died on the 17th August, 1877.

Von Berlepsch is the author of a large work on bees entitled, *Bees and Bee-keeping in districts poor in mel-liferous plants considered from the present state of the theory and practice of Apiculture*, the first edition of which appeared in 1860. This book is very beautifully written and quite fascinated the readers at the time. Of course it is no longer in accordance with the requirements of the present time, still it contains much of lasting value and of deep interest to all thoughtful bee-keepers.—From Gravenhorst's *Illustrated Bee Journal* for April 1886.

ASSOCIATIONS.

THE LIVERPOOL SHOW.

Having been asked to act as judge at the above show I left London by the 4 p.m. express. Having a due regard to keeping down my expenses, I took a third-class ticket as there was no fourth, as there is in Germany, where you see carriages ticketed 'for thirty-six men or six horses.' I chose a smoking carriage, but unfortunately nine ship-stokers chose it too, and some of them were in that quarrelsome stage, which is diagnostic of drink. I have travelled a good deal, and there are three classes of people that I bar (frame hive),—babies, newly-married people, and those that are intoxicated, they are all very well in their way, with the exception, perhaps, of the first and last; but as travelling companions they are not desirable, so I got into a second-class (guards even on the L. & N. W. are but mortal, and a shilling goes a long way).

My companion remarked that I was graduating for a collier degree, and when I got to Edgehill Mr. McClure could not recognise me through the dust, and it was not till I began to smile that the fact of my existence began to dawn upon him.

On Tuesday we started for the show, where I met Mr. Carr and Dr. Bartrum. The exhibits, though few, were very good, and the competition was so close, that in some of the classes we had to award extra prizes, while in the bee-furniture class, the contest between Messrs. Neighbour and Meadows ended in a dead heat, each getting a silver medal and half of the money. The former showed a most complete collection of hives, while the latter was much stronger in the accessories, the extractors being very cheap for the money.

In the Miscellaneous Class, there were some very good exhibits of observatory hives, bee flora, and some very pretty glass supers of honey; but the inexperience of the judges led them to overlook 'the best hive in creation.'

If 'A Surreyshire Bee-keeper' was one of the judges, it might have been put down to revenge.

In the section honey class there was very little to choose between the exhibits of the 'Bee and Fruit Farming Co.,' and Mr. Woodley: in both the flavour was excellent, and the sections well filled. Unfortunately, though three prizes were offered, and there were three exhibits, only two prizes were awarded. The honey of one exhibit was evidently not that of this year; and a faulty section was dressed, and the exhibit was disqualified and the reasons notified to the Committee for them to decide what they should do.

Some very good run honey and extracted honey was shown,—one class for 1886 and one for any year previous.

A sumptuous lunch was provided for the Judges, the indefatigable Mr. Huckle, and others. Dr. Bartrum was in a most argumentative mood. He first tried me with politics. Being a firm believer in rotten boroughs, an anti-Home Ruler, divine right of kings, an anti-G.O.M., I thought it wasn't safe to discuss politics with rabid Radicals, and then he tried to get me to discuss life insurance!!! Eating is too serious a thing for discussions of any sort. The mind ought to be solely given up to the contemplation of the different viands, and in no case is the adage more true, 'Do one thing at a time, and do it well.'

It was well for one of the candidates for the third-class certificate, that the Judges had lunched well, as before lunch his fate was trembling in the balance. The other candidate passed a capital examination, though he insisted that four days was given in Cowan's *Handbook* as the time the egg took to hatch. The point was left for the Cowan of egg cases preserved, and though his lordship gave it against the appellant, his hatchment of third-class expert was nevertheless granted.

During the judging a man rushed into the tent, and asked us whether we were going to judge the hot water. Mindful of former days, when the names of Lancashire and Cheshire were ominous, I replied that we were too often in hot water to judge hot water.

However, sir, the hatchet is now buried. We smoked,—at least I did, the calumet of peace. The L. & C. A. evidently wish to work harmoniously with the B.B.K.A. Nothing could be more hospitable and cordial than their reception of us, and I feel confident that the past is forgotten, and that the future is peace.—GEO. WALKER, *Wimbledon*.

LIVERPOOL EXHIBITION.

After a lapse of several years the Royal Horticultural Society have renewed their provincial shows, and, recognising the relationship that exists between apiculture and horticulture, the Council rendered material assistance towards the arrangement of a department for bees, hives, honey, &c., in connexion with their country exhibition. The present honey season being an unusually late one the greater part of the new honey entered for competition did not put in an appearance. There were, however, a few excellent samples; in these two classes the first prize was awarded to the Bee and Fruit Farming Company, and the second to Mr. W.

Woodleigh of World's End. In the class for old honey the first and second prizes were awarded to Mr. J. Littler of Frodsham, and the third to Mr. L. Duffin. Equal prizes were awarded to Messrs. Neighbour and Son and Mr. W. P. Meadows for collection of appliances. In the Miscellaneous Class first and second prizes were awarded to Mr. W. Dixon of Leeds, the former for an interesting case of small articles connected with bee-keeping and the latter for an observatory hive; the third prize was awarded to Mr. H. T. Gibbs of Lower Bebington. Certificates were also awarded in this class to Messrs. Neighbour and Son, G. T. Murlock, and Mr. H. Dobbie.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

HIVE CONSTRUCTION.

[425.] Thanks to the advantage of having made your personal acquaintance, I have studied the character of English hives, giving them the preference to all others. I have however allowed myself to make some additions and modifications to the Abbott hive.

Encouraged by our *Société Impériale Economique*, which has considered my hive worthy of being propagated in Russia, I have had the drawings lithographed. I send them to you, hoping that you may find time to cast your eye over them and give me your opinion.

Here is what I find rational in my construction.

1st. The division in the centre of the frame which unites the advantages of long frames like the English and American with the narrow frames like those of Berlepsch, Dzierzon, &c., and obviates the necessity to use wire for fixing the comb-foundation. These wires would prevent the cutting out of the honey-combs, which I place in my boxes lined with parchment.

2nd. The sliding floor-board (this idea I learnt from you, sir) has the peculiarity of lowering one-third of an inch when it is not pressed up by wedges. This facilitates the withdrawal of the floor-board in spring, and in damp weather favours ventilation and gives more room for the egress of the bees during the height of the gathering season.

3rd. The super with frames longer than the body of the hive. I cannot lay claim to this idea, although I had it before the appearance in your valuable *Journal* of the article 'Amateur Hive Making' (No. 190, p. 59, 1886), which represents the same system of frames. In winter the super, emptied of frames, can be filled with dried leaves, chaff, &c.

The hive serves for two colonies, which assists in retaining the heat as well as the winter provisions. The construction of such a hive in comparison to two separate ones evidently costs less.

Opposite to the entrance I have windows like those of the Layens hive, but smaller and without hinges. I very much regret not being able to visit your bee exhibition, which must be most interesting and instructive, and I shall have to satisfy myself by reading the reports in your *Journal*. With due respect for your ideas and wide experience, I cannot imagine the motive which induced you to use a vertical hive of seven storeys; consequently, with small frames. Hives on these systems yield less honey, their manipulation takes more time, the mass of frames occupies space to the detriment of combs, and their construction costs more, to say nothing about their want of solidity; and if not well fitted there must be cracks between them. These reasons have caused me to avoid vertical hives.—A. DE ZOUBAREFF, *St. Petersburg, June 13th*, 1886.

[In the drawings sent by our correspondent, the frame has an upright bar in the centre, as shown in Fig. 2 of Langstroth on *The Honey-bee*. The twin hive is on legs, and the frames are placed at right angles to the entrance, which are in the long front of the hive, and in this respect differs from Mr. Abbott's Anglo-German twin hive, which has the entrances at the ends, and the frames running parallel with them. The runners are strips of wood and metal fastened inside the hive, and the frames are kept at a proper distance apart by pieces of twig of gooseberry, cut the right length, and a pin driven through the pith into the frame. The division-board has a wedge in the centre, which, when pushed down, forces the ends against the sides of the hive. The supers are about half the size of stock-hive, like the Dadant half hives, and over the whole goes a sloping roof, like those of the Cowan hives. The floor-boards slide in grooves, which slope so that they are wider at one end than the other. When the boards are pushed in as far as they can go, the groove at the end is just the thickness of the board, and allows of a wedge being inserted to tighten it up at the other end. The alighting-board is hinged, and will fold up to give shade to the entrance in winter. The seven-storeyed hive alluded to by our correspondent is a Stewarton, and we have explained to him that it is a particular system of octagon hives, and differs from the shallow tiering hives common in some parts of the Continent, and which he evidently alludes to.—ED.]

DR. WALKER ON QUEEN INTRODUCTION.

[426.] On page 282, letter No. 400, Dr. Geo. Walker says, 'A Hallamshire Bee-keeper' propounds a perfect way in the *Journal of Horticulture*, and gives your readers the plan (?), which he says is 'to keep the bees without a queen or eggs for two days, and then let the queen run in, when they will take to her at once.'

Allow me to inform your readers that 'A. H. B. K.' does *not* say so, the words are Dr. Walker's and can only have been given to mislead, and bring in reports of failures. Would it not have been more consistent of him, as an authority in apiculture, judge, and expert examiner, to have given the plan in the *exact* words used by 'A Hallamshire Bee-keeper?'

Had he tried it on his two African queens, he would certainly have introduced them; therefore, his non-trial of the plan, either with valuable or worthless queens, to see whether it is correct or not, shows he does not follow the apostolic advice and 'prove all things.'

To say the least: it does look queer for a doctor, not to be able to quote properly the prescription of someone else, which will prove such a perfect way to cure all his woes.

Allow me to correct another little error of his; he says 'A. H. B. K.' 'propounds' a perfect way; implying, that it is his own, original and new, just out, published for the first time; this is not so; the writer referred to clearly implies the contrary; it was published years ago, and is to be found in his own library. Mark, I give this as a positive assertion, because he will not deny having *one* publication with it in, any more than a parson will deny possession of a Bible. Also the first account published of an alien queen having been introduced to strange bees was accomplished in accordance with the *Law* quoted by 'A. H. B. K.', and this was done one hundred years ago; also the *Law* is applied with success

by some of the largest bee-keepers in America; surely a plan, which is simple, easy, scientific (for it is founded on the first *Law of Nature*), and which has never once been known to fail, after years of trial, is entitled to rather different treatment than a sneer and misrepresentation; I don't know whether it is the way with doctors to treat everybody's nostrums so but their own: I trust they don't. Also, he need not have asked who 'A Surreyshire Bee-keeper' is; because if *he* does not know, I am sure no one else does—when the 'bull's eye' is lit, the bell rings; if it kept *silent*, we might not be sure of the fact.

The *Law* quoted by 'A. H. B.K.' in the *Journal of Horticulture*, pp. 475-6, is public, and you can give it to your readers; it is very short, simple, and easily remembered, and is as certain in its application as that water will run down-hill. You can also, if you see fit, reprint the various ways he gives for its application, or even the whole article, I am sure no one will object, particularly if it is to prove the 'balm of Gilead' for such woes as the doctor is evidently afflicted with.—GRINDING WHEEL.

The Law referred to.

'If a hive of bees have no queen, or means of rearing one (that is, have neither queen, eggs, unsealed brood, nor queen-cells, in their hive), they will invariably accept a fertile queen at the entrance or dropped in from the top, providing they have been deprived of such means of requeening themselves forty-eight hours.'

No matter how long they have been queenless, or how old the bees may be, or what time of the year it is, nor even if fertile workers be present, unless they have begun to lay eggs; no failure will ever result. So that there is no exception whatever to the Law; nor must the queens ever be caged: the application of it can be varied scores of ways.

QUEEN-INTRODUCTION.

[427.] The above question seems to be receiving a good deal of attention lately, but I am surprised that the easier methods of Mr. Simmins have not received more notice in our *Journal*. The method of Mr. Clowes (414, p. 295) is simply the old one of caging plus smoke enough to thoroughly demoralise the bees, and plenty of food to gorge with. His experience is nothing new to those who have introduced a few queens by the caging process, though I prefer, with an obstinate stock, covering the queen with honey rather than the bees. It is less trouble, and, I think, more successful. During the last twelve months, I have introduced, one way and another, between sixty and seventy queens, and so can speak with a little knowledge.

Mr. Abbott (413) recommends none other than the old method of caging. He says, 'I use no other, and do not recommend any other principle of queen-introduction.' Prior to that, he says, '*As a rule*, this mode is perfectly safe and certain.' This latter statement could be made of any system that has been advocated. 'As a rule' all are safe; but my experience has shown me that the cheapest and easiest ways are also the safest. I have introduced with an Abbott queen-cage, but with varying results. Last autumn I endeavoured to re-queen two stocks with two Carniolans, each of which was killed in the cage. The bees had bitten off part of their legs, and otherwise damaged them. One they were trying to drag through the cage near the top; the other lay nearly lifeless at the bottom, half its legs gone. They were fine, healthy, and young when I put them in. It is quite common to have them attacked when released from the cage. Mr. Abbott himself has not much confidence in the influence of caging, for about half an hour after liberating the queen he searches the hive to see if the bees are paying her unnecessary attentions.

I should infer from Mr. Abbott's letter either that he has not tried the newer ways, or if he has tried them, that he has found them successful, for he says nothing against them. If the former is correct, Mr. Abbott becomes a poor adviser, for in the imperfectly developed art of bee-keeping progress is certain, and a man cannot progress unless he is willing to give a trial to new methods. If the latter condition is true, I pass it without comment. I have introduced by far the larger number lately according to Simmins' directions. They are simple and safe—his No. 1 method, given in the *Journal* a few weeks since, simply appearing to be perfection. In the last few months I have succeeded by this process in two instances in which it is highly probable caging would have been a failure, as according to Raynor in 'Queen Introduction,' they presented the case in its worst features. On examining my hives early in April I found one stock had been queenless for some time. All the brood was hatched out, and they had raised a young queen, which had not begun to lay, and was, I believe, unfertilised. I removed her, and introduced another the same day by No. 1 process.

In May, when there was no food coming in, I found a stock queenless—the brood all being a few days old, and young queen-grubs in an early stage of progress. I thought this would be a severe trial for the system. I removed the queen-cells, and in the evening introduced queen as before. I examined two days after and found the queen laying vigorously. Verily there is 'balm in Gilead.' I commend Simmins' methods as being the safest, cheapest, and easiest yet discovered.—JOHN RUDGE, *Bee Hive, Dursley.*

A PLEA FOR THE TITS.

[428.] I am sorry to see in a recent number two letters condemning the poor little tits as destroyers of bees. I have been a bee-keeper and a close observer of the habits of birds for more than half a century, and my experience coincides entirely with that of Mr. A. E. B. Hill, namely, that the tits do not *kill* worker-bees; but that they eat dead ones by thousands is most certain, and I quite believe all 'G. H. G.' states about the number of bees' heads left by the birds, and also that 'Bee Protector' found remains of bees in the birds' crop, but this does not prove that they *kill* worker bees. I am fond of seeing and watching these pretty, interesting, and extremely useful birds; and not far from my hives there is always a piece of suet suspended by a wire swinging under a tree for their special use, and both *Parus major* and *Parus coeruleus* pay me frequent visits and pick up all the *dead* bees lying near the hives, but I never saw either seize a living bee.

I kept several birds of both species in a large aviary and was in the habit of taking to them any dead bees I found about, and their *modus operandi* with these was curious and interesting. The insect was seized and carried to a perch and placed under the claws of the bird, who then plucked off the head and flung it aside, did exactly the same with the extremity of the abdomen containing the sting, and then ate the remainder; and on several occasions, while *Parus major* was thus occupied, the little blue tit clung underneath the perch, and adroitly snapt the delicate morsel from between his friend's claws. As an experiment I once put a live worker bee in the aviary, but not one of the birds would touch it, their instinct, I presume, teaching them that they would be sufferers thereby. I once saw a sparrow hop on to the alighting-board and seize a fat drone, and the spotted flycatcher (*Muscicapa grisola*) kills and eats drones by hundreds; but it is my firm belief that neither flycatchers, sparrows, swallows, nor tom-tits, kill worker-bees. What the bee-eater (*Merops apiaster*) may do I cannot tell, as unfortunately this beautiful bird is so rarely seen in this country.

Any one desirous of ascertaining how very useful tits are to both agriculturists and gardeners has only to watch a pair of blue tits at this season of the year feeding a numerous brood, and he will be astonished at the number of green caterpillars taken into the nest-hole by the parent birds in the course of one half-hour.—A. B. HERBERT, *Edinburgh, June 24th.*

SUBURBAN BEE-KEEPING.

[429.] The delightful change of weather we are now being favoured with has enabled us now fully to ascertain by practical experience the possibility of successfully keeping bees in this district. We have here abundance of early bee-pasturage, and this alone has always appeared to me to be the best guarantee as to honey production. The great difficulty I experienced at first was to obtain a suitably protected locality; this secured, seasonable weather and proper management must finally settle the pros and cons of suburban bee-keeping. With all the disadvantages of the past spring, at the present moment I feel more than satisfied at the present aspect of affairs.

On the 28th of June I took off my first small sections of honey, which was considered so unusually early in Rutherglen that the local editor has visited my apiary, and is now preparing an article for the encouragement of local bee-keeping. The hive from which I took this early honey is now working on sixteen bar-frames, with a 21-lb. crate of sections, which are almost ready for removal, and I am hopeful of being able to give a good account of my experiments ere the season closes. As local adviser of Rutherglen, I visited on Tuesday last two apiaries at Burnside, one at Gallowflat, and one at Busby, and found in every case strong stocks and cheery prospects for 1886.

With the exception of Busby (which is over six miles from Glasgow) all the other districts are in close proximity to our large city, and to those who have seemed to have failed in keeping bees near Glasgow, I shall certainly extend a cordial invitation of visiting my own, and I am certain those others I have mentioned will also gladly give all the information in their power. I had arranged to keep additional hives in the vicinity of Duncon, and near East Kilbride, but later in the season the whole will be transferred to Rutherglen under my own personal superintendence. I trust these few remarks will encourage others to persevere in making bee-keeping a source of pleasure and profit to those who are not favoured with country homes with all their attendant advantages.—E. MCNALLY, *Rutherglen.*

MY FAILURE AND MY SUCCESS.

[430.] Allow me to say a few words in reply to your editorial note on page 226 in reference to my failure to eradicate foul brood by treatment with salicylic acid. You say that if I failed (on this point there can be no doubt whatever), 'it is probably owing to the reasons given on page 216 in our answer to R. J. Collisson, and not to any fault of the agent employed.' I have read the answer in question and failed to see anything in it to account in any way for my want of success. As I stated in my former communication I used salicylic acid in all food given to my bees for more than a year previous to the outbreak of the disease. After that I used the salicylic acid and borax solution according to the instructions given in the *British Bee-keepers' Guide Book*, following them to the letter. I also used the fumigating or rather subliming apparatus described in the same work at intervals of three or four days, until at the close of each operation the bees and combs were covered with the condensed acid, but as I said before to no purpose. The cost of this apparatus was fifteen shillings, of which sum I now think that at least fourteen shillings and sixpence was thrown away. Having regard to the high temperature (128° Cent.) necessary to keep salicylic acid in its vaporous form, your assertion that the fumes of the acid penetrate every bee and larva in the hive is certainly a startling one. I am quite of your opinion as to the harmlessness of the acid to bees, and I believe that if spread on the floorboard it would have no more effect on them than so much fresh water-sand. Although there is within a distance of less than a quarter of a mile an apiary where foul brood is rampant there is not a trace of it in any of my hives, and I owe this immunity to the use of a little phenol in the syrup given to the bees.—ROBERT SPROULE, *Fairview, Co. Dublin.*

QUEEN-WASPS.

[431.] As an instance of the fertility of queen-wasps this spring I have had four nests in empty hives in my apiary, two on the bottom of the comb-foundation as it hung in the frames, one on the bottom of comb in frame, and one on the crown-board of hive, and the singularity of it was they were in four bee-houses, one in each, two of them new ones unoccupied by bees. I had one under observation for a week, but I think they have all been destroyed as the nests seem quite deserted now.—W. EDWARDS, *Mousehill, Surrey.*

JUDGING AT HONEY SHOWS.

[432.] The other day I exhibited at one of our county shows. The schedule required the exhibits to be staged at 10 a.m., and the judging was supposed to be over at 2 p.m. On arriving at the bee department at 3.30, I found only the honey judged; at 5.30 I returned, but the judging was not finished, and I was obliged to leave. I was told that at 7 p.m. the judging was not over!

Shows are held to encourage bee-keeping, and to point out to the public the merits, or disadvantages, of the exhibits. How can this be effected if the judge does not finish his work before the show is opened? Although the show may last three or four days, those who go on the first day cannot in many cases go on any of the following days; and is it not hard on a cottager who gets a holiday on purpose to go to the show, if he finds himself forced to leave without knowing the result, which in many cases might occur in the instance I quote?

In writing this I am not recording an isolated case, nor yet am I touching it up; I am stating facts, and in the hope that those who have it in their power to make the necessary reform may read this. Surely this state of things should not be allowed to go on, or it will cause many to cease from exhibiting altogether.

There are two ways of remedying this: either by beginning to judge earlier, or having more than one judge. I should strongly advise the latter, as being more expeditious as well as more satisfactory.—AN EXHIBITOR.

DISPUTED OWNERSHIP IN SWARMS.

[433.] As your valuable paper is looked upon as an authority in all bee matters, would you kindly give your decision in the following bee case:—A and B are neighbours living some 300 yards apart: A's bees swarmed in June, 1885, and pitched on a wall of a house belonging to B and ran up into a hole above a door in this wall, where bees have been for many years; A did not attempt to take them. In October, 1885, A, for the first time, informed B of the above circumstances, and asked leave of B to take stones out of the wall and get the honey; this request B refused, saying, 'It would disfigure the wall,' which is a very conspicuous one: A said, 'Very well. I thought I would ask you.' Yesterday, June 27,

1886, these bees swarmed and were taken and hived by B. To whom do they belong?—R.

[The previous letter does not state whether A kept the swarm in sight till they found a lodgment in the wall of B's house; but presuming that he did, B. having for reasons stated, refused A permission to remove the bees, they from that time became the property of B, and we are of opinion that the swarms issuing from them also belong to him.—Ed.]

THE KENSINGTON SHOW.

[434.] Kindly allow me a small space in your next issue for a few observations on the above show. I do not consider that English honey-producers are treated generously in the schedule at all. Take the following as a proof. General staging, No. 14, says, Continuous flat table staging will be provided free of cost. No. 15: If additional stands, &c., are required, they will be erected at *cost price*, subject to the approval of the Committee and a month's notice being given to the Secretary. I write Mr. Huckle, asking if he can give me any idea of the cost of a stand 6×3 feet, and I get his reply, 27*s*., referring me to Classes 6 and 7.

Surely, sir, it will not cost 27*s*. for the hire of two trestles and three pieces of one-inch board for a week. I should have considered 5*s*. ample payment for the use of the same; 30*s*. may be, and I hope it is, a small sum to many bee-keepers, but to a working man it is a large item, and simply means a veto on his exhibits. I feel sure that the lowest estimate for exhibiting half a ton of honey means 5*l*. Put it thus:—30*s*. for entrance fee; 30*s*. carriage of honey; 2*l*. for loss of time and travelling expenses: and then there is the risk of getting a smash by the railway company people of your honey. These, I say, are large items in these times of bad trade, general depression, and low price of honey: but if there had been prizes offered in Class 6 of, say, 40*s*., 30*s*., 20*s*., and 10*s*., for the largest and best display of English honey of not more than 10 cwts., and no less than 2 cwts., the produce of the exhibitor's own bees, we should probably have had a few fine displays: at any rate, I should have done my best to take the premier prize. Then, again, there are no prizes offered for supers of honey. Why, sir, my experience and observation at all honey shows I have visited for several years past has been as follows: Visitors pass from exhibit to exhibit with such remarks as 'These are fine sections;' 'Isn't that honey clear?' 'Yes, very nice,' &c.; but watch their faces when they come to a fine specimen of honey in a large dome or bell glass, or plate glass super—then their language suddenly emerges into the superlative tenor. Friends are sent for, and their attention called to the exhibit. Yes, sir, interest is awakened, questions are asked, and soon an interested throng surround the super. This is no stretch of imagination—'no phine phlights of phancy'—but verified facts. —Woodleigh.

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[409.] *Bees in Refuse-heap.* (Inexperience.)—Bees visit such places for the salt which is always present where manure, &c., are stored. A fly which is easily mistaken for a bee is a constant visitor to manure heaps, or any foetid wet places.—W. B. Webster.

[409.] *Bees in Refuse-heap.* (Inexperience.)—The bees go for the different alkaline salts generated in such places; how often do we see them drinking from the gutters, &c., near stables and manure pits.—G. H. G.

[410.] *Difference in Energy of Bees.* (Inexperience.)—There is a great difference in the working of different bees, in a great measure due to the queen; bees with a young one working much harder, early and late, than those governed with an old one that is worn out. Bees with foul brood work in a very lethargic way, and it is wonderful to notice the difference when such have had only one dose of salicylic acid.—G. H. G.

[410.] *Difference in Energy of Bees.* (Inexperience.)—Your observations on this subject are quite correct: some stocks are much better workers than others; hence, it is advisable to rear mothers from such stocks that prove themselves valuable on account of their great industry, gentleness, and other commendable traits.—W. B. Webster.

[411.] *Quality of Clover.* (Young Scot.)—No; but rather improved in not only quality, but quantity, owing to the better fertilization of the flowers.—G. H. G.

[411.] (Young Scot.)—Not in the least; in fact, the reverse is the case, as by fertilising same, impetus is given to the plant to produce a larger amount of substance, to wit, the seeds.—W. B. Webster.

[421.] *Colour of Sections.* (Honeysuckle.)—The sections in a rack will be as good in colour off an old stock as a new one.—W. B. Webster.

[421.] (Honeysuckle.)—Not at all, as I have worked sections and supers over skeps with the combs five and six years old and as 'black as ink,' the super combs and honey being equal to that worked over early swarms.—G. H. G.

[421.] Yes, if breeding is still going on in the comb; not otherwise.—Woodleigh.

[422.] *Hive during the night.* (Honeysuckle.)—Comb building, ventilation, feeding brood, in fact everything with the exception of harvesting of honey and pollen, which can only be done during daylight.—W. B. Webster.

[422.] Ripening honey, comb-building, sealing, &c. Bees are apparently busier in the hive during the night than the day; at least that is the result of my own observations with glass supers; I have watched them many times.—Woodleigh.

[422.] If the bees are in supers they carry and store a good deal of the honey from body hive during the night, and they are fanning and ventilating the hive throughout the small hours; they are quite as busy as in the daytime, the bee knowing but little rest night or day. A book might be written in answer to this query almost!—G. H. G.

[423.] *Does a bee after stinging another bee lose its sting?* (Honeysuckle.)—No; not as a rule.—W. B. Webster.

[423.] *Bee stinging another.* (Honeysuckle.)—Yes, whenever a worker-bee stings it leaves its sting, whether it be another worker, clothing, human being, or anything else, but I only remember two cases of observation in a worker using its sting on its opponent, and then the two bees appeared locked together; the bees stung not living more than twenty seconds.—G. H. G.

[423.] Not often; bees when fighting sting near the wing, and very rarely leave their sting.—Woodleigh.

[424.] *Destroying Drones.* (Milsom.)—You can trap them if you like, but better I think to leave them to nature, as the workers turn them out when they think it is time, and no further use is required from them.—G. H. G.

[424.] *Trapping Drones.* (Milsom.)—An almost useless amusement, under the circumstances mentioned.—W. B. Webster.

[424.] I should not advise drone traps, but should not allow an abnormal quantity of drone comb in the hive. I have a hive that never swarms (at least it has not yet), and there is generally a good few drones every year. The trapping of drones, like the empty frames with only starters in front of brood-nest, will not prevent swarming, as I have proved this season.—Woodleigh.

Queries.

[435.] *Paraffin Smell.*—Would it be risky to put bees into a hive the woodwork of which has got slightly touched with paraffin oil?—Honeysuckle.

[436.] *Camphor.*—Could uniting be accomplished through the aid of camphor being put in the hives to give all the bees the same scent?—G. E.

[437.] *Driving Bees.*—What is the use of putting the straw hive over a bucket of water when driving them?—E. Sag.

Echoes from the Hives.

Bromsgrove, Worcestershire, June 28th.—We have had three glorious days, and our little friends are at work right merrily on the clover here. About a week ago I found several strong stocks with brood on ten up to twenty frames, up to starvation pitch; just had them in time. One stock took in over two quarts of thick syrup in twenty-four hours. Many swarms are reported round here. I have had two from skeps, one going off like the wind. The nights and mornings are much warmer; bees on the wing as soon as it is light almost.—G. H. G.

Holme Apiary, near Peterborough.—A glorious transformation in bee life and nature alike. Supers crammed with bees. Have been obliged to extract outer frames of brood-chamber to give the queen a chance. In my operations I saw the queen in act of depositing an egg in a queen-cell; elsewhere crowded out: this was her last chance, and has settled a point of doubt to my mind. The egg was attached at bottom of a queen-cell, about three-eighths of an inch deep, just as in an ordinary worker-cell, and before long it would have been floated off its moorings in a royal jelly, but destined to destruction, no doubt, as other royal cells and occupants were more fully developed; as it was, the whole had to be cut out, for my extracting was to make certain, as I was working for sectional honey. After all, though late, I anticipate a fine honey-harvest, and quality equal, if not superior, to former seasons.—John H. Howard.

Ore, Hastings, July 1st.—Alas! Mr. Editor, that fearful disease, foul brood, has again appeared in my hives, after three years' disappearance—and that notwithstanding the presence of camphor in each hive, as recommended in the *Journal*, and all the frames being placed at right angles to the entrances, which seemed to be in my case a preventative of it. This, I need hardly say, is extremely vexing, especially as it happens at such an unfortunate time, just when the hives are strong, clover abounds, and the bees are beginning to work well in the sections. I can say from experience that there is little or no pleasure in an apiary where this disease exists; and it annoyed me so much some years ago that I almost gave up bee-keeping, fond as I am of *it* (bee-keeping I mean, not the disease!) and greatly regretted that I had recommended bee-keeping to my parishioners. After having been free from it for about three years, I ask, 'Can there have been any change in my management which has caused it to reappear this year?', and the only change that I am aware of is, that I have used Simmins' dry-sugar feeders during the late long-protracted spring, instead of feeding with syrup medicated with salicylic acid. I have found the dry-sugar feeders extremely convenient, but I do not clearly see how one can use salicylic acid with them. I may mention that one hive as yet shows no sign of the disease, and that is one which, being weak, I fed with syrup and salicylic acid. It is now the strongest and healthiest of all. I am determined to do all I can to eradicate the disease, and shall first try thorough fumigation with salicylic acid, as you have recommended, earnestly hoping that it will be successful.—Rector.

Bromsgrove, Worcestershire, July 4th.—I have had the entractor at work at last. Last week the weather has been splendid; bees are literally teeming in with honey, and working merrily in the supers. We want, around here, some gentle showers to generate the nectar. The bees are terribly wicked with the heat. Two hives have turned out the drones.—G. H. G.

South Cornwall, July 5th.—The report of our annual meeting, in your last number, will have indicated the state of the weather for bee-keeping up to the middle of June. It seems to have been a backward season everywhere. But now for the last fortnight we have had most splendid weather for bees and for hay, for bees must gather honey, as hay must be made, while the sun shines. There were a good deal of arrears to be pulled up, for I fancy that there comes a critical period, after stocks get very strong, when, if honey does not come in, and you cannot give time and trouble to feed wholesale, you rather gain a loss. But now, for the last week, honey has been stored at such a rate that my bee-man suggests putting a quart pot into the hive to save trouble! One of your correspondents reports many swarms; here they are very few. There is a lot of 'hanging out,' no doubt, but I believe the clusters, in one case at least, are of bees taking a cooler after the hot day's work. We certainly do want a shower for some things, but a fortnight more of this weather will give us a fair honey harvest after all.—C. R. S.

Chippenham, Wilts, July 5th.—It is somewhat difficult to describe this exceptional season. For the bee-keepers it has thus far been a series of 'hopes and fears.' My bees, like others, were backward in the spring, but during the fine weather in the first ten days in May, they entered the supers and formed some nice combs; then came such a collapse in the weather that they soon withdrew from the supers, and for the rest of that month, and nearly the whole of June, they made but little progress in honey-gathering; but in the last ten days prospects have improved, and my bees, like my neighbours here, are making up some of the lost ground, and if the present weather continues we shall not have much to complain of. One of my bar-frame stocks has done remarkably well so far, of which I will give you the history in another number. Swarms have been scarce. I have not had one from a bar-frame, but on the 30th of May I had two natural ones from straw skeps—for I must plead guilty to keeping some, and, like the Rev. G. Raynor, I have a lingering fondness for the hive of our forefathers, and it is my opinion that the earliest swarms are obtained from the skeps. These two swarms, put into bar-frame hives, are doing well, and will, I think, show better results than many of the bar-frame stocks, which received such severe checks during the winter and spring. Matters are not quite so bad here as those described in another part of the county by our worthy and respected Secretary, the Rev. W. E. Burkitt, in your last issue. I know several bee-keepers in this neighbourhood who have had their sections filled and sealed, and have others in a forward state.—W. A. Warrilow.

Co. Wexford.—The last fourteen days warm weather, with strong north-west to west breezes. Swarms are the order of the day, but very little honey coming in. Most hives strong in bees and are just commencing in supers. Season three weeks later than last year.

The Mall House, Lismore, Ireland.—Everything here is *couleur de rose* for those whose hives were fed up, and who have taken precautions against swarming. I have, of my six old stocks, three with three crates each of sections 'storified.' In one hive the three crates are nearly finished, and I am preparing for a fourth. In the two others, two crates are finished except sealing, and the third well on the road. Each crate holds twenty-one 1-lb. sections. My other three old stocks have each two crates 'storified,' and will require a third storey in a couple of days. This and shading the hives have so far averted swarming. Three swarms have come to me, two of which united of their own accord, almost completely filling a large skep. I suppose one swarm was queenless. I have put them into a bar-frame and sent them to the uplands, where I transported my three stocks formed of condemned bees, which have nearly finished one crate of sections apiece. This is splendid weather. Broiling hot, and the fields just white with white clover. I got another swarm last night; it arrived in a horrid mash, as it contained some combs and honey. I did my best with it, but it was a disagreeable business. To-day I was watching it, and saw a young queen crawling about in front of hive on the ground, and I made a pounce on her. I could not help the impulse, but fear it may have been very wrong, as she rose at once and went off with a grand flight, and may not have had time to reconnoitre rightly. She seemed quite a young queen. Some heather honey is brought into the hives in my garden each year; and as this is the case I suppose there is no fear of the honey in sections being carried down into the hives if I leave the crates on till end of August. Last year the bees stored honey in the sections till quite that time, and I fancy the honey will be better and riper if so treated, and the bees continue to work better if unrobbed of their treasures sooner. I had to feed one hive after the comb was drawn out in twenty-one sections. They began thrusting out the drones, so I took the hint and gave a second crate of sections to give them employ-

ment at wax-making, to prevent any sugar being stored, and then fed all supered stocks by little boxes of sugar, moistened with water, put at the door and so contrived that they could only be reached by bees from the hive. I put them there at evening and removed them in the morning. At that time I examined two hives in an adjoining garden and found two magnificent stocks, but without a pound of stores between them. I advised instant feeding. This was done casually and uncertainly. Result: one stock perished; the other, in spite of this glorious weather, only has five bars covered with bees. So much for 'letting 'em alone.' I think I have made one step in advance—I use little or no smoke, and none at the entrance. I have put on all my 'storeys,' added bars, &c., without any smoke beyond an odd puff from above, and this only twice or so, as I find I can do without it. Another word of comfort I must add for those who are disturbed by advice to dispense with gloves, &c. I have used them from the beginning, and *scarcely ever* get stung in them. I always spray them slightly with carbolic acid and water, one in twenty, before beginning any work. My occupations compel me to avoid stings as much as possible; and I find that with great quiet, caution, and the avoidance of jars, operations of all sorts can be stinglessly carried out in gloves. This is the greatest honey flow I have ever seen, but that is not saying much, as I am only three years old at bee-keeping, and two of those years I did bee-killing principally.—Irish Novice.

NOTICES TO CORRESPONDENTS & INQUIRERS.

E. Sag.—*A Beginner.*—As you are beginning bee-keeping we would advise you to purchase *Modern Bee-keeping* (price 6*d.*), and endeavour to master its contents.

M. L.—The probability is that the bees are raising a new queen, but, being in a skep, there is a difficulty in determining this.

E. Davenport.—The honey forwarded has a most peculiar aroma—so peculiar that we have never perceived the same from any honey that we have had brought under our notice. We are inclined to think that the peculiarity is derived from something *extra* flowers. There is a 'malty' smell about it, and we are of opinion that the bees have been paying visits to some substances which were not so odorous as flowers.

Honey Suckle.—We desire to tender our best thanks for your very excellent suggestions; and we promise to give them our best consideration, and would feel much pleasure in being able to carry them out into practice.

J. T. Marsh.—*An Inferior Queen.*—The bees being Italian, there can be no doubt as to the purity of the mother-bee. We gather, however, from the record that Mr. Blow has given in the *Journal* that queen-raisers are at times much exercised respecting the fulfilment of the orders that they may have to execute. They at such times purchase queens loosely from any quarter at hand, and the consequence is that many of the queens, though Italians, are Italians of inferior breed. The queen that has been forwarded to you, though pure, is an inferior one, and hence the backward condition of your hives and bees.

Extractor.—Our advice would be to let your bees alone. There appears to be no cause for anxiety. As the season advances the bees will assert themselves.

C. Lake.—*Queen Three Weeks Old.*—You were in too much of a hurry. In bad weather queens may be quite three weeks old before they lay. They mate late, and are tardy in laying.—F. C.

R. M. E.—*Foul Brood.*—The comb is diseased. It is foul brood, or more properly, Bacillus alvei.—F. C.

W. O. Miller.—*Dead Bees.*—Nothing can be determined by dead bees. It is some one of those bacteria which abound, and 'for which they are none the worse.'—F. C.

Ada Selby.—*Examining Dead Bees* is most uncertain work if the question is one of health or disease. The queen appears to have been diseased, but I would not positively say that the bacilli were not putrefactive instead of pathogenic, *i.e.* did not multiply in the body till after death.—F. C.

A-B-M-N.—1. *Broken Queen Cell.*—The broken queen-cell would not be restored by the bees. The larva, being exposed, would be removed. Other queen-cells may exist in the hive, and swarming, if intended, would probably be delayed merely for a day or two. 2. *Honey Shrubs.*—We should recommend for planting around your apiary the 'snowberry,' which yields an abundance of bloom delighted in by the bees, and forms a thick, close hedge if kept trimmed to the height of about three feet. If you prefer an evergreen, to afford shelter to the hives, we advise an evergreen-privet hedge, the bloom of which is also highly appreciated by the bees.

A. B.—1. *Cutting Queen's Wings.*—Do not do it. See the replies to 'Selected Query' on the subject, p. 5, current volume. 2. You can get drone size thin foundation for section from most dealers. 3. *June Swarm swarming again.*—It depends upon your management. If you keep them at work in supers and give the queen plenty of room below, they will not be likely to swarm. At the time of sending to the moors swarming should be over.

Miss M.—1. *Swarm disturbed four days after hiving.*—As you were not at home when the swarm first came off you could not do better, and they will not be much the worse, especially as the weather had prevented comb building. 2. *Supering Swarm in Skep.*—Feed them until they have built out their combs. Caution: do not turn up the skep to examine for fear of turning it the wrong way and breaking the tender combs. Let one raise it, and another person stoop down and look up into it. Then super at once.

Novice.—1. *Spiteful Bees.*—Refer to p. 296. 2. *Syrup Granulating.*—Use the best loaf or crystal sugar and a small portion of cream of tartar to kill the 'grain,' as confectioners term it. 3. *Secretary for Warwickshire B.K.A.*—W. N. Bower, Esq., Knole, Warwickshire. 4. *Cask for Honey.*—Yes; scald it out well before using it.

Nucleus.—The explanation is that the bees had prepared for swarming, had been prevented by the weather, the old queen had been slain by a young one, the young queen had been waiting for an opportunity for her wedding excursion, from which she had only just returned, when you opened the hive on 26th June. You ought to have done that which we presume you did—left them alone. Bees, when queen-raising, or having an unfertilised queen, are generally spiteful. 2. Drones produced in worker cells would be inferior to those produced normally in drone cells.

E. H. R.—*Unfertilised Queens.*—The bees changed their queen in the autumn, or then lost their queen, and the young one did not secure impregnation. She is a virgin-queen, and of necessity, a drone breeder.—F. C.

T. C.—There were nine editions of Warder's *The True Amazons* published. The first appeared in 1712, the second 1713, third 1716, fourth 1720, fifth 1722, sixth 1726, seventh 1742, eighth 1749, ninth 1765. Occasionally one or other of the editions may be found in the catalogues of dealers of second-hand books. We have a complete set of all the editions. If you are a member of the British Bee-keepers' Association you could consult its library. We believe it has the set almost complete.

Irish Bee-keepers' Association.—*A Correction.*—I find that I have reported Mr. Sproule at our conversazione published in your last issue to have said, 'that by feeding he had built up a queen and eighty-one bees into a strong colony;' what Mr. Sproule did say was, 'that the well-known American bee-keeper, *Mr. G. M. Doolittle*, had done so.'—Walter J. Stanford, *Hon. Sec.*

Sparrow and Bees.—I don't know anything about tom-tits and bees, but I have seen the common house-sparrow carrying off bees from my hives, in fact I disturbed one in the very act, causing him to drop the bee, which I picked up and found it to have been freshly killed.—E. W. P.

[Did our correspondent observe whether the bee picked up was a drone or a worker?—Ed.]

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 22, 23.—Lincolnshire Agricultural Society, Lincoln. Secretary, R. R. Godfrey, Grantham.

July 28.—Surrey County Show, Leatherhead. Entries close July 19. Sec., Captain Campbell, Box Grove Road, Guildford.

July 30-August 5.—Great National Show at South Kensington. Entries close July 10th. Secretary, J. Huckle, Kings Langley.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

July 14.—Swanmore Park, Bishop Waltham. Entries close July 10th. Hon. Secretary, H. W. West, Swanmore House, Bishops Waltham, Hants.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

Business Directory.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
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Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
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THE BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

A Meeting of the Committee was held at 105 Jermyn Street, on Wednesday, July 7. Present: T. W. Cowan in the chair, the Hon. and Rev. H. Bligh, Captain Bush, R.N., Captain Campbell, the Rev. F. G. Jenyns, the Rev. J. L. Seager, the Rev. F. S. Sclater, J. M. Hooker, and the Secretary.

Letters were read from Dr. Bartrum and Mr. Walker, regretting their inability to be present.

The Secretary reported that a letter had been received from the Royal Agricultural Society, intimating that the Prince and Princess of Wales proposed to pay a visit to the bee-department of the Royal Agricultural Show at Norwich. It was resolved that the Chairman and the other members of the Committee present at the show do make suitable arrangements for receiving the Royal party.

The arrangements for the forthcoming exhibition at South Kensington were further discussed, the Secretary reported that the Conference room at South Kensington had been placed at the service of the Committee on Saturday July 31, and also on the following Wednesday, August 4.

Mr. Cowan and others will read papers on Saturday, July 31st. It was resolved that the Chairman and Mr. Stewart do act as a sub-committee to make the necessary arrangements in connexion with these Conferences.

PROGRAMME OF ARRANGEMENTS FOR THE SOUTH KENSINGTON SHOW.

Wednesday and Thursday, July 28th and 29th.—Goods received and staged,

Friday, July 30th.—Show opens at 10 a.m. Judging throughout the day.

Saturday, July 31st.—Conference opens. Mr. T. W. Cowan and others will read papers.

Tuesday, August 3rd.—Examination of Candidates for First and Second Class Certificates, commencing at 10.30 a.m. Quarterly Meeting of County Representatives, commencing at 4 o'clock in the afternoon.

Wednesday, August 4th.—Conference. Discussion on papers read.

Thursday, August 5th.—Close of the Show.

Members of the Association having paid their subscriptions for the current year, and being desirous of attending the Exhibition, should make application for free passes to the Secretary.

'BUMPING.'

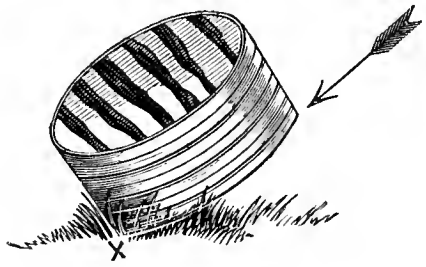
The time is again approaching when cottagers will be 'putting down' their bees and inquiries are being made as to the best means of saving their lives. The process of driving, which is so familiar to visitors to the bee-tents at various shows, offers a ready method of attaining this desirable object; but it is, at best, tedious, and moreover hard work when many stocks have to be taken in one day. In some cases, especially when a cold wind is blowing, or a stock is queenless, or the hive not filled with combs, it is difficult to get the bees to run. Many bees are generally left between the combs, to the annoyance of the cottager, and, worst of all, robbing is liable to be set up, extending beyond the owner's garden to the surrounding neighbourhood. Where six, or more, stocks in one place have to be dealt with, the operation of driving them will occupy quite two hours, and towards the end of the time robbers become so troublesome that they get into the skeps more quickly than the original inhabitants are driven out.

Five years ago, the writer had to take seventeen out of thirty stocks for a gardener, the swarms had, for lack of skeps, been hived in large flower-pots, pans, pails, &c., out of which it was impossible to drive as the combs would not jar. Necessity being the mother of invention, he tried breaking out the combs and brushing the bees off them. This was so successful that he adopted the plan generally, and two years ago communicated it to his brother bee-keepers in the *Journal*. The plan at the time met with much opposition, theoretical objections, having no foundation in practice, being raised against it. It has, however, since received almost universal acceptance, and for the benefit of our new subscribers we purpose repeating the instructions.

In driving, the bees are taken from the combs, which are left in the skeps and given to the owner

as they stand. But in the 'Bumping' process, the combs are taken from the bees, therefore some large pans will be wanted from the owner in which to put them and some sacks to cover them over with.

To prevent robbing, close all the hives in the garden by pushing some grass lengthways into the entrances so as to prevent the bees getting in and out, but at the same to admit air. A slight puff of smoke should be given just to prevent attack while closing the entrances. Now, take one of the stocks you are to operate upon, give a good puff of smoke, turn it up and bump it on the ground, the flat way of the combs on the corner of the top of the skep. (See sketch.) The arrow shows the direction of the



blow, and × the point at which the skep should strike the ground.

If the combs are very old it will require considerable force to break them out, but young combs must be handled gently. If there are sticks they must be divided between each comb: a keyhole saw is convenient, or a pair of pruning shears, or tinman's snips. The combs will break away close to the top of the skep and fall over to one side. Be careful they don't fall out. Replace the skep on its stand, upside down of course, lift out the combs one at a time, a penny gridiron is very convenient to put down between the combs to raise them on, brush the bees rapidly off both sides with a wing into the skep, put the combs into the pan and cover them with a sack. As each skep is emptied of its combs replace it on its stand, right side up, resting the edge on two or three stones, and leave it for the bees to cluster. Do not forget to liberate the other bees before leaving. If it is desired to find the queen she may often be seen on the combs when brushing. If not, she may be searched for among the bees before replacing the skep. The other details as to packing, carrying, hiving, &c., are, of course, the same as when driving. The whole operation need only take five or six minutes, against twenty or thirty by driving. The shortness of time required admits of confining the other bees, which might not be advisable if some hours were to be occupied by driving.

Some inquirers have asked if there is not danger of crushing bees or queens when the combs break out. The writer's experience of several hundreds of stocks bumped and brushed out is that he has never found a queen killed, and the number of workers is quite insignificant, perhaps three or four found on the floor when the others are clustered. Tender combs may with ease be lifted out whole and the bees brushed off, which would often collapse during driving. When it is required to transfer from skeps to bar-frame hives in cold weather, bumping is a most convenient plan. By brushing the bees off only the first comb back into the skep, tieing that into a frame and putting it in the frame-hive, and then brushing the bees off all succeeding combs into the frame-hive on to the comb or combs the bees and brood are separated only for the short time required to tie the combs into the frame, thus allowing transferring to be done at times when, if all the bees were driven from the brood, it would most likely be chilled. We trust all who are about to take bees in the ensuing autumn will bump at least one stock and report their success or failure.

ASSOCIATIONS.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

PORTSMOUTH SHOW.

This event took place June 24th, 25th, 26th, and 28th, in brilliant weather, and was the opening, but by no means the *only*, show of this enterprising Association. The occasion was the annual event of the Royal Counties Agricultural Society, which held its last meeting at Southampton, and is to hold its next, in 1887, at Reading. As this Society ranks in importance second only to the Royal Agricultural Society of England, the occasion was a grand one for the Hants B.K.A., especially as no bee-show had ever before been held in the town; and it is not too much to say it made the best of its opportunity. A pleasanter site for visitors could not have been chosen, a large slice of Southsea Common being enclosed, and the Bee Department was located in the best possible position, close to the far-famed Southsea Pier, more than one of our prominent apiarists availing themselves of the opportunity of a refreshing swim during the severe strain of a large show.

Centrally situated stood a substantial pavilion measuring 60 feet by 20 feet, ornamented with red cloth, &c., and surmounted by a handsome device (upon *floor-cloth*) bearing the legend in 9-inch letters, 'Hants and Isle of Wight Bee-keepers' Association, Honey and Hive Exhibition.' This was devoted to honey and general collections. On the left stood the pretty marquee, the property of the Association, filled with hives, supers, extractors, inventions, honey, beverages, &c., and on the right stood the bee-tent, over all floating the well-worn flag of the Association. Entering the pavilion, an experienced apiarist could not but be struck with the scarcity of honey, several classes being absolutely empty; but fortunately Mr. Bellairs had come to the rescue with a fine display of last autumn's heather honey, amounting to about 300 pounds. This was tastefully arranged with a choice collection of flowers in glass vases and epergnes, lent by Mr. Candey of Portsmouth. Some excellent sections were exhibited from Swanmore, and the champion prize was only just missed by a fine lot belonging to Mr. Sidney Dickens, who, however, was unable to make up the required quantity.

But what was wanting in honey was more than made up for in the Appliances Classes. Four manufacturers were present with very full collections, Mr. T. B. Blow, of Welwyn, crowding into the space allotted him (by no means an illiberal amount) a most imposing array of hives, tools, and etceteras, enough to frighten some, if it did, as we trust, tempt others. Mr. E. C. Walton, of Newark, also made a handsome display, his fine Observa-

tory hive being a great popular attraction, and he only missed second prize, we understand, by the paucity of hives, a matter the Judge very properly attached much importance to. Nor must we omit to mention the 'Tin-Box' exhibit of the Patent Self-Opening Tin Box Company, of London, which here displayed their admirable method of packing extracted honey, including a 'Honey Vat,' with treacle-valve complete, to hold about ½ cwt. of extracted honey, a great desideratum with those bee-keepers whose wives object to the temporary loss of every available vessel during the honey-season, and including milk-cans and washhand jugs!

Passing out of the pavilion and entering the marquee, the visitor would be confronted with a bewildering number of hives, ranging in price from the humble 'Cottar, 10*s.* 6*d.*' to the 'Squire's, 35*s.*;' extractors of every device and all the newest 'dodges;' section-racks ditto; inventions of all sorts; and last, but not least, a large display of aerated honey beverages, manufactured by Mr. Fry, of Bishops Waltham. These were staged against the back opening of the tent, which was closed, but not guarded. The weather was hot, the work thirsty, and grateful bee-keepers blessed Mr. Fry for a license to taste. But Sunday was hotter; there were no bee-keepers, though the show grounds were full of cows and *their* keepers. The consequence was, when Monday came—but we would rather draw the *curtain*, only regretting we did not substitute a strong stock of bees at that back entrance.

In the Bee-tent, Mr. Bellairs, as usual, held forth the modern method and its superior results, throughout the four days of the show, enlarging upon the 'New National Industry,' and he was assisted throughout by Mr. Evan Maberly, of Mudiford, who displayed great skill in driving and quickness in 'spotting' the queen. Probably, greater interest, and indeed enthusiasm, was never manifested in the cause before, immense crowds thronging the lecture-tent long before each lecture, many visitors complaining that although they had attended two days specially to 'hear about the bees,' they had been unable to secure places. A thrill of excitement was caused when it was rumoured in the crowded pavilion that the President of the Royal Counties Agricultural Society, the Earl of Northesk, was actually within the arena receiving a handful of live bees from the Honorary Lecturer! This was the second occasion the 'sacred arena' has been stormed successfully by nobility, Lord Mount-Temple having been the first.

Mr. J. M. Hooker, of London, attended as judge, and to his conscientious labours, involving many hours of hard mental toil, all praise is due. The difficulties of judging in a large and complex exhibition like this are too often lost sight of, and the gratitude due to this class of workers is too seldom acknowledged.

The Association is to be congratulated in having secured so enthusiastic and energetic an honorary local secretary as Mr. J. J. Candey, of Landport, has proved himself to be. In every department signs of his work and arrangement were to be seen, and to this, and his mastery of detail, is to be attributed in a very large degree the success and great public interest manifested. As a result of this we may mention that of all the honey entered in the Selling classes, not an ounce was returned, every bottle finding a purchaser; the receipts from this department being 15*l.* 11*s.* 8*d.*, and doubtless had there been more honey entered it would have been disposed of.

The Schedule of Prizes was an extremely liberal one, forming part of the 100*l.* the Association purposes devoting to this object this year. In this connection it is right to mention that the Medals, now for the first time offered by this Association, are of a substantial and exceedingly handsome design, bearing upon a shield azure the three roses of Hants on the obverse side, the reverse side bearing the name of the Royal President and place and date of shows. The dies were struck from designs by Capt. W. P. Ogle, R.N.

The following is the list of awards:—

For extracted new honey put up in the most attractive form—1, Sidney Dickens, Barnet; no other entries. For honey-comb designs—1, W. Woodley, Newbury; 2, R. McNally, Glenluee, N.B. For collections—1, T. B. Blow, Welwyn; 2, C. T. Overton, Crawley; 3, E. C. Walton, Newark, and S. Dickens, Barnet. For observatory hives—1, E. C. Walton; 2, C. T. Overton; 3, S. Dickens. For 35*s.* hives—1, S. J. Baldwin, Bromley; 2, A. D. Woodley, Reading; 3, E. C. Walton, Newark; H. C., S. Dickens. For 25*s.* hives—1, A. D. Woodley; 2, T. B. Blow; 3, W. Hollands. For 10*s.* 6*d.* hives—1, T. B. Blow; 2, E. C. Walton and S. Dickens; 3, G. Forward and S. J. Baldwin. For extractors—1 and 2, W. P. Meadows; 3, E. C. Walton. For section racks—1 and 2, T. B. Blow; H.C., C. T. Overton. For skep and racks—1, C. T. Overton and T. B. Blow; 2, E. C. Walton. For useful inventions—1, Patent Tin Box Co. and W. B. Webster; 2, C. T. Overton. For honey, 12 lbs. super in sections—1, H. W. West. For ditto, best display (over 100 lbs.)—1 and 2, E. H. Bellairs, Christchurch. For ditto (under 100 lbs.)—1, Miss Myers, Swanmore; 2, J. Downton, Andover. For bees' wax—1, G. Forward, Newtown, Christchurch, and W. Burgess, Hinton; 2, J. Downton, Andover. For home-made hives—1, W. Welch, Southampton; 2, W. Weller, Liphook; 3, H. Rowell, Odiham.

NORWICH SHOW.

The following is the list of prizes of the above Show:—

For the best hive not exceeding 15*s.*—1, Neighbour & Son; 2, Dines & Son; 3, Neighbour & Son; H. C., Abbott Bros., and the Bee and Fruit Farming Co. For the best hive not exceeding 10*s.* 6*d.*—1, Neighbour & Son; 2, Dines & Son; 3, A. T. Adams; H. C., Howard & Meadows. For the best crate of sections for storifying—1, Dines & Sons; 2, Howard & Meadows; 3, Abbott Bros. For the best super of honey—1, W. Woodley; 2, John Lawrence; 3, R. R. Godfrey. For the best twelve 2-lb. sections of comb honey—1, H. Beswick; 2, Bee & Fruit Farming Co.; 3, Miss Gayton. For the best twelve 1-lb. sections—1, H. Beswick; 2, J. H. Howard; 3, J. H. Howard; H. C., F. T. Chevallier, and the Rev. G. G. Winter. For the best twelve 2-lb. jars of run honey—1, Miss Gayton; 2, F. T. Chevallier; 3, A. Kendle. For the best twenty-four 1-lb. jars of run honey—1, F. T. Chevallier; 2, J. R. Truss; 3, W. Woodley; H. C., J. H. Howard. Best sample of comb foundation made in the presence of the judges—1, S. J. Baldwin; 2, J. H. Howard. Best collection of appliances—1, Neighbour & Son; 2, Howard & Meadows; Equal, 3, S. J. Baldwin and T. B. Blow.

IRISH BEE-KEEPERS' ASSOCIATION.

A committee meeting was held at 35 Trinity College, Tuesday, July 6. H. Chenevix, Esq., J.P., in the chair. Present: The Rev. P. Kavanagh, Drs. Traill, Knight, and Allen, Messrs. Gillies, Sproule, Read, Edmondson, Millner, and Walter J. Stanford, Dunavarra, Lucan, Hon. Secretary. Routine business having been transacted, the sub-committee for the Grand National Exhibition reported that circulars had been issued to the leading members asking them to exhibit, and giving directions for packing their honey, and that several members had already promised to send honey. It was decided to make arrangements with a commission agent to sell members' honey and to issue circulars to all members stating that their honey can be sent to Dublin to the care of the hon. secretary, where it will be sold in open market subject to ordinary fluctuations, the Association taking no risks. With a view to furthering bee-keeping among the people, the hon. secretary was desired to try and obtain permission from the Board of Works to erect the bee tent in the Phœnix Park on Saturday, July 31st, and Monday August 2nd, lectures and manipulations to be carried on all day, a small charge being made for admission.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

ANOTHER SOUTH AFRICAN QUEEN.

[438.] On the 16th of June last, I received a letter from Dr. Stroud, of Port Elizabeth, South Africa, saying he had forwarded me a queen by the same mail, as a trial trip, to see if others could be got through by the same simple means.

The queen arrived on the following day in a large double 'Benton' cage, with about one hundred workers, though only eighteen of these were alive besides the queen. The food appears to be the usual 'Good' candy; but as only one-fourth of the same was consumed, I should say that a single box with less food and not more than fifty workers recently hatched, would be all-sufficient.

The journey occupied twenty-three days, there was not the least sign of dysentery, and the remaining workers as well as the queen were bright and lively. Dr. Stroud calls them the 'Kaffir' variety, but I do not know if the bees accompanying the queen belong to the same race; these were evidently hybrids, and I think, the smallest I have ever seen. However, the first batch will be out by the time these lines appear in print, and in due course your readers shall know more about this new race of bees, so far as can be judged from one queen. It is a great pity Dr. Walker did not save his two queens, as it would have been most interesting, and more satisfactory to be able to compare results.

My own queen was inserted under quilt in the evening after being alone and without food for a time previous, according to one of my methods of Direct Introduction. Having been confined on so long a journey, it was not until the fifth day that she began to lay, but she promises to be very prolific. Her appearance is that of a common black queen; but I have no doubt others brighter and larger may be raised from her with care.—S. SIMMINS.

QUEEN-INTRODUCTION.

[439.] In Mr. C. N. Abbott's letter concerning queen-introduction, there is one statement rather perplexing. A queen, he says, must not be sent off with eggs in her ovary; otherwise, she is sure to die in confinement. *But what is the remedy?* If sent away in the summer, the laying season, how could she be sent in any other state? If taken out and put in a box prior to being sent, she will die of the confinement. If left in the hive she will go on laying.—S. L. B.

[The above query having been forwarded to Mr. C. N. Abbott, elicited the following reply.—ED.]

In responding to an official request that I would reply to the above, I hope I may be allowed to say how much more pleasant it would be if 'S. L. B.' had quoted me correctly. I did not say that a queen sent off with eggs in her ovaries is 'sure to die of confinement,' nor did I use the word confinement at all. I said that a queen suddenly taken from a hive in which she was laying vigorously, and caged, *i.e.* caged in another hive amongst alien bees, would almost certainly die, and that such a queen suddenly packed in a box and sent on a journey, would share a similar fate. It will, I think, be evident that a queen laying vigorously, say, at the rate of only 2000 eggs per day, must deposit an egg about every eight seconds, and this work, if suddenly stopped by her removal from her hive and her associates, and transferring her to a cage amongst alien bees, will put her in a condition of the gravest danger, for it must be borne in mind that such a queen, to enable her to keep up her enormous egg-laying power, will have been crammed with partially-digested food up to the moment of her removal, and will be full to repletion, and in a cage amongst angry bees will have little opportunity of obtaining easement. The same may be said of such a queen if packed in a box and sent on a journey, for although she be with her own bees, the unquiet of travel will have a similar effect. The obvious remedy when removing a queen in the condition stated is to put her in a box with a piece of comb and some of her own bees, and give her time, by keeping her in perfect quiet for a day or more, to void her surplus eggs, and to stop their further secretion. This has been my experience in such cases.

I am obliged to a correspondent, John Rudge, for suggesting (p. 307) that I have tried the new ways, as he calls them, of queen introduction, and that I have found them successful, and hence say nothing against them. Had I found them successful, I should be amongst the first to acknowledge them, and to do honour to the originators, whoever they originally were. My object in writing, however, was to try and be helpful, and I purposely omitted the mention of any other than the system I have the greatest faith in. Mr. Rudge's assertion that all modes of introduction are, 'as a rule, perfectly safe and certain,' is absurd, and his suggestion that I have not confidence in my own method, because I afterwards look to see that all is right, is a gratuitous sneer that I can afford to disregard. I was 'taught to be cautious' a good many years ago, and that quality is so ingrained in my nature that I seldom lock a door or a safe without afterwards trying them to prove whether they are fastened, and I would recommend that principle to Mr. Rudge, for in bee-keeping it is not safe to accept a rule without believing the possibility of an 'exception.'

I gave 'A. H. B. K.'s' 'law' a trial on Thursday last. I had the previous day extracted the honey from a hive, *every cell* of which had been filled with honey and pollen, and most of it sealed, and there was not a suspicion of brood, eggs, or queen. I had introduced a Ligurian to a good stock of hybrids, and was debating as to what I should do with its queen, when I read the law referred to (p. 307), and at once placed her hybrid majesty on the alighting-board of the queenless old bees. I had done this many times before in obedience to my old preceptor with unsatisfactory results and had discarded the principle, but the positiveness of 'the law' tempted me to go in for another experience; and I did so. Immediately on releasing the queen on the alighting-board, a bee mounted on her back and seized a wing, two or three others made a rush at her, and she was mobbed at once. I did not interfere, but left 'the law' to work itself out and did not go near again until Friday morning, when I found the ball of bees still at the entrance, the poor queen struggling in their midst. I daresay I ought not to have interfered even then, but as there was danger of their rolling on to the ground I separated the bees and dropped her majesty into the back of the hive, turning the corner of the quilt to do so.

Saturday morning found the queen and her ball mates on the top of the hive, they having pushed up the corner of the quilt, which was a light one put on temporarily after the extracting. I suppose I ought not to have interfered this time either, but I did, and put the queen back again, covering up safely. Saturday night I opened the hive, sixty hours after giving the queen, and she was still balled, at the bottom of the combs I had put

her between, and Sunday morning found her no better off.

On Sunday night, however, she was at liberty, and I should think none the better for the mauling she had had; but as I intend to watch the hive from day to day I will report further upon it.—C. N. ABBOTT, *Southall, July* 11, 1886.

QUEEN INTRODUCTION.

[440.] It is a most extraordinary thing, and hard to understand, why 'A Hallamshire Bee-keeper,' 'Grinding Wheel,' or Mr. Hewitt, cannot write without imputing bad motives. In the *Bee Journal* of July 8 he accuses me of wilfully misstating the facts of the way in which he introduces queens, and of not proving all things. One accusation is as false as the other. I only referred generally to the plan, which I did not imply was a speciality of 'A. H. B.'s,' as I knew of it long before I knew of his existence, nor did I think that any one would try the plan without referring to the *Journal of Horticulture*, which I quoted. In the same way we talk of direct introduction without always specifying the exact details of the process. I am quite willing to admit that it might have been better to have quoted the exact words, but all I wanted to know was whether the plan was infallible.

The second charge against me has no more truth in it. The first opportunity I got I tried the plan, though I did not believe in it. I took away the queen, all the brood eggs—there were no queen-cells—and gave the bees some sealed brood, which was over twelve days old, from another hive, which was rearing a queen. The bees were well fed, and there were no queen-cells formed; and sixty hours after the queen, &c., &c., had been removed, I let a Ligurian queen run in at the top of the hive, and when I looked at them twenty minutes after they had balled her, so I resorted to caging, and it was not till ten days afterwards that they would receive her, as she was balled over and over again.

Perhaps 'G. W.' will say that I ought not to have examined the hive, and that, as so often happens, balled queens do not necessarily die; but she was too valuable to risk. But as I have some spare queens I will follow the plan, and not touch the hive for twenty-four hours.

In the *Bee Journal* of July 8th, Mr. 'Useful Hints' is rather severe on my failure; far be it from me, sir, to attempt to invade the sacredness of your sanctum. Whoever he is, long may he reign (or live) to give us the benefit of his experience. But is queen-introduction such a certainty? In Root's *A. B. C.* (1883, p. 191) E. M. Hayhurst confesses to having lost nearly all of one batch of queens. Mr. Root prefers the Peet cage, Rev. G. Raynor the Peet cage or pipe-cover cage, while Mr. Abbott dislikes both of these, and uses the Raynor cage. It is quite refreshing to find that doctors are not the only ones who differ. Again, the failure to introduce the Kaffir was suggested to be due to the fact that the bees were raising queen-cells quite oblivious of her presence. Within the last few days a queenless hive received a queen, though they had two capped queen-cells which were at least eight days old.

I have used the pipe-cover cage for many years, and have had very few failures, but the conclusion of the whole matter seems to be that there is no infallible way. It is a well-known fact, Many remedies, no cure, so when we find so many modes of introducing queens, we come to the conclusion that 'balm' is not yet in Gilead.—G. WALKER, *Wimbledon.*

QUEEN INTRODUCTION.

[441.] Mr. C. N. Abbott (pp. 294, 295) says, 'Notwithstanding the opinion of the "Hallamshire Bee-keeper," and others cited by Mr. Walker, it may be taken for granted that *there is no condition in which alien queens will be so likely to be well received after caging, as that existing in a hive in which there are young brood in all stages and plenty of hatching bees.* Put that in italics, Mr. Editor, and let others disprove it if they can.'

Do I understand rightly, that he gives me this as a challenge to disprove? if so, I must decline disproving such a vague proposition. First, he says, 'There is no condition in which alien queens will be so likely to be well received after caging;' here we see it is all 'likely, nothing positive; his alien queens, by the words he uses, may be fertile or not, which makes a vast difference; but here again nothing is clear, though only one word extra would have done it. Then he says, '*Young* brood in all stages.' 'Young' brood implies that there is 'old' brood, but I never saw or heard tell of any *alive;* but perhaps he can tell me the difference between brood which is, and which is not, *young.* Brood in all stages must include the dying, dead, and rotten stage, and young brood in all stages thus, can only be in a foul-broody stock, where we certainly have it in all stages. He also says, 'plenty of hatching bees,' what quantity or number does he mean by 'plenty,' as most people have different ideas of what is *plenty?* 'Hatching bees' cannot on any account mean *hatched* bees, but must only be those that are nibbling through the caps, those that are not doing so, and those that have crept outside the cells won't do, according to his proposition.

In my letter to the *Journal of Horticulture*, I hinted that probably one reason why the system I am advocating was scouted in this *Journal* was because it was likely to take business out of the supply and queen-dealers' hands, not even giving them the small profit on an introducing cage, or repetition of a queen order on account of losing the first one; therefore, it is amusing to see him trying to smother me with *his* 'thousand of bricks,' and standing up in defence of the introducing cage which bears his name; but as I have no interest in any supply or queen trades, and neither do I write like some to advertise myself or business; I, at least, ought to be treated fairly, and squarely; I have spent scores of pounds experimenting and testing the various things put forward by others, for no other object but because it is my 'hobby' to obtain bee-knowledge and then impart it to others. But I get poor encouragement to do so, when those who ought to inquire first into the truth of what *I* say, right off-hand misrepresent me. I could tell you about a terrible bee-disease, closely allied to, but distinct from, foul brood, which is ruining apiaries in the country; which disease is quite incurable by Cheshire's, Hilbert's, or any other known remedy; this subject I have also been studying for years, and is so vast and full of difficulties, that I dread writing about it; I sent samples of the disease to Mr. Cheshire in the spring of last year and asked him to investigate it, as I felt the subject was too much for me; he agreed with me that it was not *the* foul brood, though very much like it; I will say this, that once it gets into a hive, the only safe cure is destruction.

But this queen introduction system I have at my 'finger ends' as it were, and I want *every* bee-keeper to test it and send the result to the Editor, which will only cost ½*d.* for 2 oz. of manuscript or post-card; and let him decide between the 'Ayes' and 'Noes,' whether I am right or not; of course I shall expect some *Noes*, because there will be some who cannot or *won't* see my instructions clearly, and others will have motives to induce them to say 'No' when they know I am right.

I will give a few ways to try the system, so as to help all to try it. Suppose we have a stock we wish to divide and introduce a queen to one half; first fill a fresh hive with combs, without any eggs, brood, or queen-cells in, and put it on the stand of the stock we are going to divide, which must be removed to a fresh stand; thus this hive will catch all the old and flying bees which, if

not sufficient to form a swarm, may have some of the bees from the old stock shaken into them, care being taken not to get the queen; these old queenless bees will accept a fertile queen at the flight-hole in forty-eight hours time, and the next day sealed brood may be given them to build them up.

Another way is to remove the queen and all combs containing eggs or brood (which put in other stocks), and then give them the strange queen forty-eight hours after. Another way is to shake all the bees, *minus* the queen, into an empty hive or box *on the old stand*, without combs or foundation, and proceed as above. This is a good way when laying workers are present, and the queen may be given at the end of twenty-four hours.

Another way is, after removing the queen, to cut all queen-cells out on the ninth day, and then, forty-eight hours after, let the strange queen run in.

Stocks or casts with virgin queens lost on their bridal trips—which may be noted at a glance by the bees running and humming about the entrance to attract a strange queen, as those inside will be found as still as death, conserving their vital energies until a queen comes—are in the right condition; also the virgin queen of such hives may be dethroned, and a laying queen given in forty-eight hours. So are queenless stocks discovered so in the spring in the right condition also. But the most useful application of this system is in the autumn. At this time stocks have little or no brood, as a rule, and perhaps our most valuable queens are in stocks that are not in safe condition for wintering, or we want them in another hive or situation, or we want to replace old queens with young ones. Well, all we have to do is to remove the queens we wish to dethrone, and at the same time carefully look for unsealed brood or eggs, and if any are found give them to another stock. Forty-eight hours after, or three months for that matter, the strange queen may be given at the entrance, or if the weather is chilly, she should be dropped in the cluster under the quilt, and if all other things are right, the hive needs no more opening till spring. These new queens for introducing may be kept in a 'Benton' mailing-cage, with a few bees, until it is *convenient* to give them to the bees, which may be done at any time of the day or night. I have dropped them in at midnight, when it has been frosty.

Although I have here given a number of ways to work this system, each one may try others. The only 'law' to remember is this: 'When bees have no queen nor means of rearing one (that is, have no eggs, unsealed brood, or queen-cells in their hive) they will always accept a fertile queen at the flight-hole or dropped in from the top. Providing they have been in such a state forty-eight hours, it matters nothing how old the bees are or how long they have been queenless, and it makes no difference how heavy the queen is with eggs or how light, as long as she is fertile and given alone without caging.

This system is a straight, level, broad road, on which the veriest infant in apiculture can safely walk, not a wire on which only a 'Blondin' in the art can travel.

It is also the only *direct* one ever published, as nothing but the queen is given, as straight and direct as can be. How can the meaning of the word 'direct' be twisted to mean first introducing to a nucleus, and then it (combs, bees, brood, and queen) *united* to a stock having just had its queen removed? I never could see any difference between it and uniting two or more stocks of bees, so well known and so old. I don't wish to throw cold water on the plan, though so many seem to fail in introducing their queens by it. I believe it is *good* when all the *conditions* are right, but what I take exception to is the word 'direct' in the title; where does it come in, and what connexion has the plan with the English meaning of the word?—A Hallamshire Bee-keeper.

BEE PASTURAGE.

[442.] Pressure of business has prevented my replying to your reviewer of my *Bee Pasturage* sooner. I ask his indulgence for once, seeing that this is a very busy period to the bee-keeper. In his review of my book, he would lead readers of the *British Bee Journal* to understand that the plants described therein are not accompanied with their botanical or scientific names. It is true the list given at the end of the work contains the popular names only, but those bee-plants noticed at length (of which there are nearly a hundred) have their botanical names attached. I am at one with your reviewer as to the advantage of the botanical names being given to all plants recommended as bee-flowers; but those Latin names are only intelligible to a few—for instance, not one in twenty (bee-keepers) can tell you the popular name of *Cratægus oxycantha*. Still, in a future edition, I hope to add the Latin names to all the plants that are worthy of being called bee-flowers.

The honey and pollen values have been ascertained from experiments that, to give in detail, would be wearisome in the extreme; suffice it to say, that they were obtained from various counties in England and Scotland, and cover some fifteen years' close observation. Originally, the experiments were conducted with regard to the fertilisation of flowers by bees. Of course, I do not wish that the values given should be considered absolutely correct, but, as stated, approximate.

Bees do gather honey from clematis (wild), as I have repeatedly proved from actual experiment in Dorset, Surrey, Beds, and Yorks.

The secretion of honey in some plants is indeed variable. For the past fifteen years I have never seen bees visit seakale for either pollen or honey; this year the blossoms have been laid under great penalty for pollen. Every one extols *Limnanthes Douglasii*, but with me bees hardly, if ever, work on it. Figwort has been for the last three weeks simply infested with the honey-bee from six a.m. until seven p.m., and even later, yet there are some who condemn it, and doubt bees ever visit it, call it a wasp-plant, a fraud, &c.—Hy. Dobbie, *Thickthorn*.

SUPERSEDING QUEENS.

[443.] Mr. Hooker objects to the editor's advice, 'Keep only young queens.' In this I am entirely at one with the latter, and I am glad to see that he shows it to be a matter of the first importance. Bee-keepers, generally, do not seem to be aware that the whole prosperity of a colony depends upon the *youth* and *vigour* of the reigning queen. Some stocks may do well during the third season of their queens, but it is not the rule; and I have never known a colony, even with the same queen, do so well as when the reigning mother is in her second season, or what is really her first full summer; and as my numbers increase, I am more and more impressed with the vital importance of keeping no queens over until their third summer, unless it may be any which have shown exceptionally good qualities. Those are retained for breeding, though never again allowed to head a powerful colony. During the early spring of their third summer many queens give out, often before others can be raised with any chance of being fertilised. This is a serious loss, and the time thus given is never recovered.

Mr. Hooker quotes from the *American Bee Journal* the replies given by a number of prominent bee-keepers in answer to a query as to the best time to supersede queens, but because nearly all give an answer in favour of permitting the bees to do this when they think fit, that is no reason why it should be the plan which gives the best results; on the contrary, it simply shows that in following the few who advise such a course in their endeavour to obtain the highest returns with the minimum of labour, such men are practising very poor

economy, and sooner or later must see their error. Who has not seen the wonderful rapidity with which a queen spreads her brood during her first spring months? The bees are influenced by her own determination and vigour, and make every effort to assist her; but as the summer wanes her powers decline; the following spring she is less vigorous, her bees act accordingly, and if retained another season, the deterioration is rapid, and but too plainly visible. The queen is the soul of the hive, and if the best results are given by a colony when the queen is at her highest state of perfection, it is but false economy which teaches that a hive should not be kept in that state of greater prosperity.—S. SIMMINS.

METAL FRAME-ENDS.

[444.] It is desirable that all frame-ends should be capable of being securely fixed to frames of standard size and thickness without reducing the top bars by shaving or bevelling, as is necessary with some patterns. The metal should be flush or level with the top of frames, or in using the ordinary rack of sections the space from the top of frames to the underside of sections would be more than *bee space;* combs would be built between in consequence, and make the removal of sections more difficult. By the way, do you know that the patented metal end of Mr. Lyon is exactly the same as that which has for some time past been manufactured and sold by Mr. Neighbour? Whose invention is it?—JOHN M. HOOKER.

QUEEN WITH CUT WINGS.

[445.] Three years ago I drove a stock from a skep I bought, and cut the queen's wings as closely as possible. While in my possession she was a splendid breeder. Last summer I handed her to a friend who was in want of a queen. Early this spring she was very prolific, but in the latter part of May she failed, and finally was not. Thus this queen, except when I removed her, must have remained in the hive at least three years. Her age I did not know. Cutting queen's wings makes it extremely easy to discover her whereabouts; her long body uncovered by the wings readily discloses her presence.—J. RUDGE, *Dursley.*

FOREIGN OPINION.

[446.] In your 'Gleanings,' which I always read with great interest, Mr. H. D. Cutting lays down some strange notions. 'It is the instinct of bees,' he says, 'when they are crippled or diseased to leave the hive to die.' Knowing bees his must be—of a Spartan character for their stoical courage; but I believe live bees in England have the trouble of carrying out most of their dead, and sometimes require the assistance of the bee-keeper also. 'Sometimes,' he says, 'bushels of bees can be swept up in cellars. These are diseased bees that would have died in the hive. Few bees are lost in the snow if they are not diseased.' So all our fuss about shading our hives from snow-reflected sunlight is useless. The thousands of numbed bees we see lying about our hives in spring-time are there for the most part to prevent dying inside. Yet, strange to say, he finds some of these bees have such vitality that after being in the snow for thirty minutes, they will revive and return to full vigour again. I wonder if H. D. C. has ever watched the effect of a little sunshine on the drooping energies of these outlying bees. I thought every bee-keeper had observed this, but perhaps in Canada it is different.

I was not aware before that bee-keepers in Canada left the entrances open when they put them in cellars. No room for surprise when they find bushels on the floor—having crept or fled out and got away from the hive, and unable to retrace their way for want of light. I wonder if the bees rob each other in these circumstances? If so, it would account for the destruction. It is putting bees on human conditions of civilisation. They perform their burglaries in the dark! He says it is unfavourable to the bees to close the hives on the stands outside. Under ordinary circumstances I suppose it is true. Last January I was experimenting with a stock of five frames. I ventilated the hives and closed the entrance. Being a loose floor-board, I was able to raise the hive and look under the frames each day. They died at the rate of one per day. That is, in six days six bees had fallen from the combs to the floor-board, and remained there. None died at the entrance. It would take a long time at this rate to produce bushels, such as they get in cellars.—J. RUDGE, *Dursley.*

EXPERTS AS EXHIBITORS.

[447.] I should like to raise my voice against an evil we as bee-keepers experience at all our bee shows, and that is, the unfairness of the expert of the county being allowed to compete against, may I call them, his pupils. He acts to them as an instructor in so many cases, works them up for the 'exam.,' and then competes against them, and in the great majority of cases carries away prizes. By last week's *Bee Journal* I find the expert of a western county carried away no less than eight prizes! Surely this is unfair, Mr. Editor, and if they must show, let it be done in an honorary competition, or special classes provided as we find at all our horticultural shows, where separate classes are provided for professional and amateurs alike. The expert now, in many cases, is also a manufacturer of hives, foundation, &c., which he can 'recommend.' This I do not mind so much, as he has to compete against large manufacturers, who devote their whole time to the study of these appliances, but I do think it unfair for him to compete against his own scholars; and where an expert has not sufficient fairness in him to convince him against such a thing, the committee ought, I think, to show him the 'error of his ways.—G. H. G.

STINGS.—SALICYLIC ACID.

[448.] 1. Having noticed several letters in the *Journal* —*re* stings—perhaps I may be allowed to give my experience. On June 1st, while hiving a swarm, I received four stings on the wrist which were very painful for a time, but only slightly swelling like a flea bane; nothing more occurred until exactly a week after when my wrist began to swell considerably, with intense irritation and heat, which lasted about two days and then went gradually away.

2. A friend of mine had a swarm (4lbs.) about a week ago, and after hiving the swarm he sprayed the brood combs in the parent hive with salicylic solution thinking there was a trace of foul brood; he tells me that shortly afterwards, about half the bees came out of the hive and fell down dead in front of it, several died in the hive and were dragged out by their fellows.

My opinion is he gave them an overdose of the solution, but the strange thing is that all (or nearly all as far as I could see when I went to look) the dead bees were workers. Why were not the drones affected?—H. G. BIRCH, 15 *George Lane, Folkestone.*

A BEGINNER'S EXPERIENCE.

[449.] Having begun bee-keeping I should like to relate my experience in connexion therewith. I purchased a swarm in a straw skep for 12*s.* 6*d.*, I had previously obtained a modern bar-frame, and a friend of mine who had had some experience with bees undertook to transfer them. This he did in accordance with the instructions given in *Modern Bee-keeping.* We put on a

'fast' feeder, and all seemed to go on well at first. In about eight days we opened the hive to examine it, and to our surprise could not find any traces of the queen having been at work. We examined every frame separately, and came to the conclusion that the hive was either queenless or that the queen was unfertile, as there were neither eggs nor brood to be found, neither could we see the queen. The foundation had been drawn out and syrup and pollen stored in it. As a matter of course I was much disappointed at my first experience of bee-keeping.

Pollen had been taken in freely during the preceding week. My friend advised me to purchase another swarm and unite the two together. I was fortunate enough to obtain another swarm in two days, and my friend united them. Before doing so we again searched the hive, but could find no trace of queen or brood. We were successful in the uniting process, not losing more than a score of bees, notwithstanding the fact that darkness overtook us. Being bad weather we did not examine them again for a week, when we found traces of 'her majesty' having been at work. I was delighted to think I had a queen this time for certain. Can any of your readers who have had experience in these matters tell me how it was that the bees carried pollen into a presumably queenless hive; and also say whether we proceeded in the right way when we discovered the state of affairs as above described?—A Young Bee-keeper.

BEE STINGS.

[450.] There are three cures for bee-stings that are very efficacious, but which I have seldom heard mentioned in the *B. B. J.*, and which have the benefit of being very simple and inexpensive—(*a*) common garden mould, wetted sufficiently to form a soft paste, and laid on the part stung; of course this could not be used on the face. A second (*b*) is carbonate of soda, wetted with saliva, or water, and well rubbed on the part stung; and (*c*) strong tobacco-water also well rubbed in, and the few moments of smarting are far outweighed by the satisfaction of having no swelling take place afterwards. But what I consider by far and away the best of all is, to become inoculated, by not minding a sting or two at first, which will give greater confidence in manipulating than any gloves or veil will do. I only use a veil when handling my hybrids. According to their estimated virtue, I would arrange them thus: 1, tobacco; 2, mould; 3, soda.—Herbert Crawley.

'IS CLOVER ON WHICH BEES WORK LESSENED IN QUALITY AS PASTURE?' [411.]

[451.] The answer appears easy, but it is not so easily proven. Whether we consider red clover, on which humble-bees, or white, on which honey-bees, work, the reply equally applies. If plants of any kind be allowed or made to bloom, and remain unfertilised, their blossoms last longer than when fertilised: but when eaten fresh as pasture, or dried as fodder, there is very little more (if any) nutrition in them than in the same bulk of leaf. Of course, they are plus the saccharine matter of dried-up nectar ungathered by insects, which saccharine matter we must remember is obtained by the leaves of the plant from the air, not from the earth. Unfertilised flowers bear a greater profusion of blossom (in the efforts of the plant to reproduce itself), consequently a greater bulk of nectar per acre, and I should say yield more fattening fodder, than when fertilised, because of the sugar remaining in the dried heads of bloom. As fresh pasturage it is observable that cattle 'pass' clover blossom, not eating it by preference. On the other hand, flowers which are fertilised by insect or other agency rapidly fade, cease producing blooms, and at once make a call on the plant and on the soil for starch (fat-forming), albumen (flesh-forming), nitrates, phosphates, and sulphates, compounds of which are stored in the seed. Now, if seeds are soon ripened, and easily shed, cattle have little chance of obtaining as food the valuable carbonaceous and nitrogenous compounds contained in them; but in the case of clover, the seed-pods remain closed and dry for a considerable time, hence clover gives to the hay containing it a weight, richness, and strength, it would not possess were the clover to remain unfertilised by our bees. The farmer, in carting away such rich clover-hay, leads off a weight of matter out of the earth itself, which insect help alone enables the plant to assimilate, for the value of all produce taken from our land, whether transferred on to the bones of sheep and cattle or stored by for winter, is enhanced by its containing the seeds of the plants grown upon it. This applies to cereals, as we know, as well as to hay and clover. I therefore conclude that the visits of bees to clover-fields increase their value as pasture or fodder growers. Bees undoubtedly increase the yields of fruit-gardens, and clover-seed is equally a fruit with the apple, the strawberry, and the acorn.—R. A. H. G., *Horsforth, Craig Hill, near Leeds.*

WASP'S NEST. [397.]

[452.] On Saturday, June 26th, a bricklayer from East Dereham (a very intelligent man, who makes his own bar-frame hives and frames, &c.), came over from Cromer, where he is now working, to see my bees, told me that he had found a curious nest in one of his hives. From his description I gathered that it was one like that figured in June 17th number of *B.B.J.* He takes the *Journal*, but had not yet found time to read it; he had it, though, in his pocket. I showed him the engraving, which he pronounced to be a good drawing of his nest. This morning I opened one of my hives, in which I discovered a similar nest. Some weeks ago I had cut out a portion of the old comb, and the nest was hung by a tiny stalk in the open part like this—

—J. Lawson Sisson, *Edingthorpe Rectory.*

DISPUTED OWNERSHIP IN SWARMS.

[453.] Will you permit me to answer, as far as I can, the questions in your issues of 1st and 8th July? The law relating to bees is in rather a vague condition, but it seems to amount to this: that a man can only claim a swarm so long as he can keep it in sight, and for that purpose, and the purpose of hiving it, he can enter upon the land of other persons, paying, of course, compensation for any damage he may do.

In the case put in your issue of the 1st (I am writing away from home, and cannot refer to the *Journal*, so that I am answering merely from my recollection of the question), I think the owner of the swarm, if he had kept it in sight, had a right of property in it, and was entitled to enter upon his neighbour's land to hive it. The fact that the neighbour refused to allow the owner do so amounted in law to a conversion of the swarm to his (the neighbour's) own use, and the owner might have sued for its value.

The question in yours of the 8th is rather more

difficult. 'A' not having attempted to take the swarm, I am afraid lost his property in it, and it was too late four months afterwards to ask to be allowed to take it. Bees cannot be identified, and hence the requirement that they must be kept in sight. How can 'A' be certain that the stock in the hole in October, 1885, was his, or that the swarm in June, 1886, was the produce of this stock. My advice to him as to going to law is like that of *Punch* to those about to marry—'Don't.'—THETA, *Withington, Manchester.*

THE C. C. C.

(THE CANADIAN COFFIN CASES.)

[454.] Don't you think, sir, that our Canadian cousins have made a *grave* mistake in sending over their honey in coffins, or is it because they think that honey is useful for coughing cases, or coffin cases for honey?—G. W.

JUDGING AT HONEY SHOWS. [432.]

[455.] My attention has been drawn to the terrible 'facts' stated by 'An Exhibitor' in the *Bee Journal* of July 8. I do not usually read anonymous letters in the *Bee Journal*, for it seems, Mr. Editor, I have less time to devote to this pleasure than you have space! But as I was specially asked to read it, I was relieved to find our late Portsmouth Show was not the object of attack, although we are indirectly indicted in the general accusation. Nevertheless, had we not been told that the 'honey only had been judged by 3.30' (alas! there was little or no competition to trouble the judges in this department), the accusation would have rested. But having read it, I cannot resist the temptation of expressing the gratitude we all owe to 'An Exhibitor' for his candid opinions and still more felicitous suggestions. In this sordid age it is refreshing in the extreme to read the naïve way 'An Exhibitor' suggests getting judges out of their beds at four o'clock in the morning, or, better still, putting on a full gang of judges to do the work! I fully agree with him that, as different breeds of cattle absorb the labours of different classes of judges, so we should have different judges for hives, for extractors, for bees, for super honey, for extracted honey, &c. I once knew a judge who, having come a long distance by train and commenced his work at ten, actually had the audacity to suggest, at three o'clock, knocking off for half an hour to get his luncheon! He was a regular grumbler, and thought it 'hard lines' because he couldn't get home that night before 12.30, and had forgotten his latch-key. If his wife wasn't an angel, she deserved to be. Why, Sir, if we had dared to refuse the lunch-time, I don't know what he would have done, seeing that we didn't pay him anything.

I am sorely tempted to ramble off with 'Exhibitor' into a general condemnation of those troublesome fellows called Secretaries (mostly unpaid too) who try to perform the work of several cart-horses at once, and always fail, instead of putting on, as they should, a large and efficient staff of clerks, as you always see the big societies do. But I will refrain. It is simply monstrous to think of 'Exhibitor' tossing about on his pillow in uncertainty. There is only one remedy. Let bee-keepers treble their subscriptions all round, and we shall have a smiling staff of clerks telegraphing results all over the country, and judges so numerous that they needn't get up before 8 a.m., nor sit up later than 9 p.m.!—E. H. BELLAIRS.

'POLLING' BEES.—At Luton, July 7, while polling was in active progress, a swarm of bees, belonging to Mr. Latchmore, banker, left their hive, and made for the door of the Corn Exchange, which was the polling station, eventually settling on a lamp-post close by. The polling agents beat a hasty retreat, while the crowd fled in all directions. The excitement continued until a man climbed the lamp-post and captured the bees by covering them with a box.

A CURIOUS CLAIM.—Samuel Davies sued David Thomas for 1*l.*, the value of a hive of bees. The plaintiff's wife stated that a hive of bees belonging to her 'swarmed' on defendant's apple-tree, but defendant would not allow her to go on the ground to get them, consequently they were lost. Defendant said he had frequently had his garden damaged through the plaintiff's bees, as the trees were beaten to get the bees from them. His Honour remarked that the plaintiff should keep the bees at home, and he was non-suited. (Before Judge Rogers at Shrewsbury.)

SCOTCH BEE CASE.—If 'C. Feilding' (p. 296) turns to the issue of *Bee Journal* for October 15th, 1885, page 335, he will see a 'Scotch Bee Case.' I was summoned as a bee expert in that case. The pursuer, 'Allison,' did not see her bees swarm, and yet the 'sheriff' awarded her full claim and expenses, which cost the defenders about 8*l.* in all. According to Scotch law no one can hinder you from following your swarm of bees, of course if you do damage you are responsible—fortunately no one tries it.—RICHARD MCNALLY, *Longforth, Glenluce.*

Queries.

Queries and Answers are inserted free of charge to Correspondents When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[456.] *Ligurianising.*—Would the game be worth the candle to Ligurianise one stock out of an apiary of four? Would not the Ligurian strain quickly become hybrid, with the usual *cross* result, and after a while disappear, as there are, perhaps, twenty black stocks in the neighbourhood?—HONEYSUCKLE.

[457.] *Final Honey Harvest.*—How and when should it be taken. Is it best to extract from *all* frames and feed syrup—if so, when? Is there a good general rule for above?—HONEYSUCKLE.

[458.] *Queen-raising.*—When from any cause a colony of bees find it necessary to replace their former queen with a new one, they rear a variable number of princesses, only one of whom is permitted to remain in the hive. 1. Are all her rivals disposed of *before* or *after* the impregnation of the survivor? 2. Are they generally killed by encasement, or by a series of duels *à outrance* between the rivals; in other words are the surplus killed by the workers, or by each other? 3. Are any cases known in which the unsuccessful candidates for office were not slaughtered, but merely expelled from the hive to seek a throne elsewhere? In certain cases the queen regnant in an established colony appears to have been attacked with varying success by a stranger; and the homeless queens of my third query would offer a plausible explanation.—STUDENT.

Echoes from the Hives.

Great Ayton, Yorkshire.—The North Riding of Yorkshire honey is coming in very fast, but swarms are scarce and late, as will be seen from a letter from a friend of mine who owns about sixty hives, part of which are in frame-hive and part in straw-skeps, dated July 5th, 'I have only got two swarms yet, but honey is coming in plentifully.'—JOHN DIXON.

Broadstairs, July 8th.—After the splended 'echoes' last week, which were redolent of honey and caused my month to water, figuratively speaking, with envy, I am half ashamed to offer my very ghost of an echo. The old scapegrace, the weather, is to blame as usual. I rather rejoiced in the bad weather up to the middle of June as, owing to my stocks being weak, I could build them up with feeding and felt that if I wasn't getting any honey no one else was; but, alas! since about the 21st of last month the honey flow has been ruined with the very finest weather.

The sun has dried up almost everything with the strictest impartiality, whether honey-producing or not, and the bees, though strong and working like steam-engines (and perhaps feeling like it in the heat), do not seem to make any headway, and your correspondent's suggestion of a quart pot in the hive to store the honey is hard—very hard to bear. It would be amusing, were it not so vexing, to see the crowd of bees waiting to take their turn at a solitary blossom with only a reputation for honey. N.B. This is, perhaps, a little exaggerated, but not so much as one might think.—HONEYSUCKLE.

North Leicestershire, July 12th.—Since Midsummer Day the bees have been at work incessantly with the exception of two days, when it was wet and cold. Supers are filling well in many instances, but in others bees do not seem to improve in strength. Swarms are scarce and casts more so. White clover is in full bloom, and there is a good honey flow on, so that there is still hope that the season will not prove a failure, as was expected three weeks ago.—E. B.

Loose, Maidstone, July 12th.—At last we have got the long-wished-for rain, this being the first really wet day we have had since May 24th, and only three or four showers during that time. Although my bees were all working well in the sections at that date, one stock having a rack of twenty-one sections almost ready to come off, I have as yet taken but one completed section, scarcely enough being gathered for the bee's own requirements. Most of the white clover was cut down without coming into flower and the second crop is dying off for want of rain, which I hope has not come too late to revive it, and then should we again be favoured with fine weather we may still expect a fair harvest from that and the limes, which are now well in flower.—W. H. DOLAN.

Lucan, Co. Dublin.—We have had very bad weather here, up till the 29th June; cold and showery day after day, and although the hives were full of bees, they were almost on the verge of starvation. However, the bees are now revelling in fine hot weather, honey coming in freely from white clover, and swarms plentiful.—LOIDIS.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

T. NIXON.—Your query as to 'Bumping' is replied to at length on p. 313.

C. E. S. WATSON.—*Swarm and Queen-cell.*—Cut away the queen-cell at once (or your bees will cast a swarm), and give four more frames, admitting the bees to the sections also. Want of room is compelling the bees to make preparation for swarming. Remember the honey-season is nearly over.

STAFFORDSHIRE.—1. *Five-pound Swarm on Six Frames.*—You might have given the swarm eight frames. Examine them at once, about midday, when the bees are working, and give four more frames of foundation. You may also place a case of sections on the hive. 2. *Carbolic Acid.*—Carbolic acid, 2 oz.; warm water, 1 quart; shake well when using, and apply a little with a goose-quill to the tops of the frames while gently raising the quilt. Manipulate quietly, and do not jar the hive or frames.

BOLTON.—*Hive for Sections.*—Any hive which has the top bars of its frames flush with its sides, will allow of tiering-up section-cases, *i.e.* of placing one case under another. All good hives are now made on this construction. We cannot recommend dealers, but any of them will supply such a hive.

M. G. MARSH.—*Straw Skep swarming.*—The reason of your skep swarming, instead of working in the sections, is that the small hole for two or three bees to enter the super is by far too small. The hole should be about four inches in diameter. The flat straw cover, which has been put inside the skep, instead of outside, must be cut away with a sharp knife or scissors, and another cover placed *outside* the hole, when the bees will build comb up to it. The bees will not work in a super after swarming twice.

A COTTAGER, *Lewanwick.*—1. *Drones cast out on 23rd June.*—The reason was explained in a recent number, namely, approaching starvation. Useless mouths being the first to be sacrificed. The casting out of drone nymphs and larvæ showed that there was actual starvation existing, and had not the weather changed immature worker brood would have been next sacrificed. 2. The number of bees issuing to form a swarm depends upon the size of the hive and the prolificness of the queen.

S. M. — *Artificially Swarmed Stock losing Bees.*—At the time you made your swarm the weather was cold and inclement. The drones were cast out from famine. The dead workers were most likely robbers and the defenders. The loss of all these bees and those which joined the artificial swarm caused quantities of brood to be chilled, and these are now being thrown out. They have most likely raised a young queen—(why not examine for yourself?) You ought to have fed while the weather was bad. The prospects of the stock are bad for this season, the loss of so much brood having weakened it greatly.

G. W. P.—*Bees selecting Places for Swarming.*—It is well known that bees do send out scouts to select their future home when swarming, and, if not hived when clustered, they generally go straight to the selected spot. Any place in which bees have been located before is peculiarly attractive to them, and is generally selected in preference to another.

B. E. G.—The light-coloured sealing at the top of the frames is, as you suppose, sealed honey, and you are also right in supposing that the darker sealing below it contains brood. As you have given them twenty-one sections to fill and an additional frame below, you should put it in the centre, your swarm will not be likely to swarm this year. If you work for supers, leave the stock hives alone, and as you remove filled sections give others.

H. J. BLAND.—If honey is coming in plentifully you could do as you propose, otherwise the bees would carry down the honey.

AN AGED AMATEUR.—*Treatment of Swarm.*—If you had fed the swarm or given some comb with brood, the bees would probably not have left the hive. They might also have been without or lost their queen. The bees of a swarm being filled with honey are generally received into other hives. Although you see the bees outside, they get food from the inside, they frequently change. If the hive is crowded and hot they must hang outside. We do not see why you cannot drive the bees, as you can remove the bell glasses for the purpose. You can if you prefer, raise the hive on to another one, or still better on to a frame-hive, and get the bees to work down into it. Removing the straw hive, and placing the frame-hive over it, would also succeed.

AN AGED AMATEUR.—*July Swarm.*—The old adage you refer to applies to natural swarms, which as a rule would be profitless in July if they were placed in empty hives. In swarming on the nucleus principle, you get a strong swarm with a young laying queen and brood, and also have combs or comb-foundation, which saves bees the time and trouble of constructing comb, as they would have to do if the swarm were placed into an empty hive. Besides, by spreading brood judiciously, the swarm can before the winter be made sufficiently strong.

J. BALL.—*Queen Deposed.*—The swarms returned either because the queens did not accompany them, or that the queen being out for her wedding flight returned to the hive. The old queen having met with an accident, or being aged, the bees deposed her, reared young queens, and from them the piping proceeded. The bees will have cast out any superfluous queens.

C. E. RADLEY.—*Colour of Honey.*—Nothing can be done to improve the colour of your honey. We see no objection to it. We believe the honey is gathered from the limes and the colour is that which we should expect from that source.

H. G. B.—1. *Privet Honey.*—This is abundant, but colourless, thin, and watery when first gathered, and has the offensive smell of privet. It is not a desirable source of supply. 2. *How often to Examine Supers.*—This depends upon the strength of the stock, the number of sections given, and the honey flow. When the clover and limes are in bloom a strong stock may be examined every three or four days.

Miss M.—*Skep on Frame-Hive.*—Give as many frames as the skep covers. Close the entrance to the skep so that the bees must pass through the lower hive. Remove the skep at the end of August. If any brood then remains in it, cut it out and tie into a frame or frames for the bees to hatch out.

F. S.—*Exhibiting an Observatory Hive near Home.*—It would not be safe to confine the bees of six frames for so long. You can prevent loss by putting on the place of the observatory another hive containing a comb or two to collect the returning bees, and when the observatory hive is returned to its place, shaking them off in front of it. If you would rather not give the bees a flight, you must remove the bottom of the observatory hive and adapt to it a box three or four inches deep, having perforated zinc sides for a flight-chamber; that is, presuming it is of that pattern in which the combs are in their natural position. If a leaf-hive, the flight-chamber must be attached to the entrance.

Rev. Gordon Palmer.—*Queen, Fecundated or Not.*—While time and health hold out I am not unwilling to make a dissection, if any useful object can be gained, but those who desire these dissections made should send the bees or queens so that they arrive alive. I am asked here to determine whether a queen has been fecundated, and her body, when opened, is black by decomposition and dried to a chip, but even in this condition this particular query can be answered, for the spermatheca resists decay and retains its moisture much more successfully than any other part. It was removed, and showed very many spermatozoa under the microscope. The queen then had been fecundated, but the reason of her failure cannot of course be given, since any general examination of the viscera was quite impossible.—F. C.

T. L. Rogers.—*Bees in Possession.*—It is not possible that your queen with only about fifty workers could have lived through May and June; and when you found the hive untenanted after that time you may be certain that all were dead. Your hive must have been taken possession of by a vagrant swarm. In all probability there are other bees within two miles, although unknown to you.

E. B. Reynardson.—*Bees Hanging in Festoons.*—The purpose of the bees hanging in festoons or ropes is the elaboration of an adequate supply of wax for the construction of cells. Whenever combs require being built, the bees fill their crops full of honey, and retain it in them. Four or five bees cling to the top of the hive and extend their hind legs whence others suspend themselves by their fore feet. In this state they remain in apparently a state of profound inactivity for about twenty-four hours. During this time the wax is secreted, and may be seen in laminæ or scales protruding from the eight wax-pockets in the under-side of the abdomen, where it is removed by the hind legs of the bees and transferred to the fore-legs, from there it is taken by the jaws, and after having been masticated, the formation of the cells commences. By means of your observatory hive you have witnessed one of the 'wonders of the hive.'

R. R. Reid.—There is no danger of the bees of the swarm returning to the parent hive.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 22, 23.—Lincolnshire Agricultural Society, Lincoln. Secretary, R. R. Godfrey, Grantham.

July 28.—Surrey County Show, Leatherhead. Entries close July 19. Sec., Captain Campbell, Box Grove Road, Guildford.

July 30-August 5.—Great National Show at South Kensington. Entries close July 10th. Secretary, J. Huckle, Kings Langley.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

STAFFORDSHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

July 17.—Tutbury Flower Show.

July 21-23.—Shropshire and West Midland Agricultural Show, Wolverhampton. S.C.B.K.A.'s Annual Show.

July 26, 27.—West Bromwich Floral Fête, Dartmouth Park.

August 2.—Trent Valley Horticultural Show, Chartley Castle.

August 5.—Darlaston Floral Fête.

August 9.—Gnosall Fête and Honey Show.

August 17, 18.—Bilston Flower Show.

August 19.—Brenwood Flower Show.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

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Editorial, Notices, &c.

THE ROYAL AGRICULTURAL SOCIETY'S SHOW, NORWICH.

BEE DEPARTMENT.

On a subsequent page will be found a report of the Bee Department of the Royal Agricultural Society's Show at Norwich, and the visit paid to it by the members of the Royal Family. In our last issue we were enabled to give a complete list of the awards, and possibly we may be permitted to give, in a future number, a detailed and an official report of the judges of bees, hives, and honey.

It is evident, from the growing interest that is being taken in this Department of the Royal Society's Show, that the claims of Apiculture to be nearly allied to Agriculture are gradually being recognised. The once small green blade has cleaved its way through the dark earth above it; it has struggled into air and light and sunshine; it has asserted the utility of its presence; it has proved its importance in the reflex advantages it confers on Agriculture in the production of seed and fruit; and it trusts that in the future the work it performs in the economy of nature may be more fully appreciated and acknowledged. In ancient times Apiculture was always considered a branch of Agriculture; and although it may be but a small matter,—'a minor industry,'—a *parvus Iulus* walking with all-unequal steps by the side of its great sister, yet it cannot be considered to be an unimportant one; and the continuance of the patronage bestowed on it by the Royal Society will make its value better known and more appreciated by the agricultural community.

We are pleased to note the great interest that both bee-keepers and the public have taken in this Show. The number of exhibitors was never so large, and the nature of the exhibits has never been so diversified, as on the present occasion; and the attempt that has been made by them to introduce to the notice of British agriculturists the most improved methods of bee-culture, which now prevail at home and abroad, has been met with marked popularity and undoubted success.

This has been apparent from the numbers which have visited the Department, and the interest evinced by the public in the manipulations of living bees and the explanations which have been given by our principal apiarians. There can be no doubt that this portion of the great Annual Show is becoming one of the most attractive of the Royal Society's Exhibition.

The great feature of the present Show, however, and the one that will cause it to be more distinctly borne in remembrance, will be the visit to the Bee Department by their Royal Highnesses the Prince and Princess of Wales, their daughters, and suite, and the close inspection and the marked interest taken by them in the various manipulations and the exhibits. In the year 1879, when the Show was held at Kilburn, a visit was paid to the Bee Department by their Royal Highnesses. The principal attraction on that occasion was the pile of American honey, about two tons of which were exhibited by Messrs. Thurber. But many years have come and gone since then, and the progress that bee-keeping has made during the interval has been great and assured. The knowledge of the science of Apiculture has spread throughout the land, and it has, in truth, become a national industry. We have no doubt that this advance was noted by our Royal visitors, and the expressions by the Princess of hope for its future expansion, especially amongst cottagers, were doubtless sincere. They received the various presents and the first-fruits of this year's honey with marked pleasure, and the visit was on all sides most satisfactory. The younger branches of the family, too, will, we are assured, never forget the knowledge gained, and the lessons taught, during the short hour that they passed in the Bee Department at Norwich.

And it is hoped that bee-keeping, thus patronised and thus acknowledged, has received from this visit a fresh impetus, and will proceed in its onward path with increased hope and renewed vigour.

USEFUL HINTS.

Since our last, copious showers have fallen in most parts and greatly refreshed the pastures and bee-flora. The white clover is recovering, and we may anticipate from it, and from second red, a further yield of honey, if, as seems probable, the weather again becomes settled and the sky cloudless. 'No sunshine, no honey.' Motherwort (*leonura*), which abounds in our district, and is considered

an antidote to *bacillus alvei*, is now yielding its nectar and pollen abundantly. The bloom of the bramble, commonly called blackberry, is also showing in quantity, and the limes are giving forth their fragrant scent. Absence of winds and increasing sunshine, after the refreshing showers, are all we require to complete our honey harvest, which, after all, may perhaps approach to an average.

Combs between Sections and Brood-chambers.—Complaints of this kind reach us; also that weaker colonies are working better in sections than those apparently much stronger. To the former we reply:—Very often too much space between section-case and brood-frames is allowed. We consider barely ¼ inch sufficient, affording ample space for bees to pass, and less inducement to the queen to ascend, for where ⅜-inch space is given comb-building often follows, and the queen finds a ladder enticing her to enter the sections, especially if they consist of drone-comb. As regards weaker colonies working better than the apparently stronger ones, the reason is more difficult to find, unless an inspection could be made, as the causes may be numerous, and the information as to the antecedents of the better colonies are not given. A good queen, in her third or fourth year, in the early spring, will often fill a hive with brood. This would seem to be nature's expiring effort, and a period of exhaustion—if not the death of the queen—follows, and the bees supersede their mother. As a natural consequence, before the young queen becomes fertile, as the brood hatches, all cells are filled with honey, and the brood-chamber becomes a mass of sealed, or partly sealed, comb-honey. What wonder then, that when this young queen, on becoming fertile, finds no place for depositing her eggs, the colony becomes listless and refuses to enter the super, its population having, meanwhile, dwindled; or, if it does enter, it is only to create a brood nest for its queen. Other reasons might be given—as the departure of a swarm unobserved, an attack of foul brood, &c., &c. One correspondent complains that the bees of his strongest hive not only refuse to enter the super, but are 'filling the body of the hive with honey, as the brood hatches;' and goes on to say, that 'because every frame has brood in it he does not like to extract.' In this case we should certainly extract from combs—using a gentle motion only—in which the brood is *capped*. Let him also consider the above suggested causes.

Removing Twelve Frame-hives to Heather (a distance of five miles).—A correspondent, asking for advice in this matter, thinking it may prove useful to others, we give it here. Extract the honey from all combs, except those containing brood, to render the hives light for transfer. Procure twelve four-sided frames, to fit the tops of the hives, made of laths ¼ inch thick by 1 inch wide. On these tack square pieces of coarse canvas, cut to fit these frames. Remove the quilts from your hives, brushing carbolic solution over the tops of the frames, and screw down a canvas-frame on the top of each hive. Tack pieces of perforated zinc on each entrance to prevent bees escaping. Screw into each floorboard, outside the hive, four large screws, one on each side, close to the hive sides, to prevent the hive slipping off the board, load the hives carefully, right side upwards, on a spring van, having placed straw beneath them, and travel slowly, causing as little jolting as possible, either by day or night, and when at your journey's end, set up the hives on their stands, remove canvas tops, put on supers, and open entrances. The ventilation having been perfect, and the disturbance to the bees very slight, there will be no occasion to examine the hives.

We have repeatedly moved hives thus long distances without the smallest loss; notably, several very strong colonies, with plenty of stores, more than 100 miles last April for a friend, which have now rewarded him with some splendid prize sections. The above operation must be performed at night, when the bees are all at home.

Finishing Sections.—When the honey-flow begins to fall off it is important to get unfinished sections completed as soon as possible. Do not, therefore, place cases of sections *beneath* those which are partly filled, but if crowded with bees, still showing want of room, a case of sections may be given *above* the partially-filled case. The bees, entering the upper sections, will draw out foundation, which may be stored and used another season, and will seal over more quickly the lower ones. Another plan is to remove the unfinished case entire, to store the sealed sections, and having placed the unfinished ones in the boxes of the 'Raynor divisional rack,' each of which holds seven, to return them to the centre of the hive, covering the exposed outside frames with strips of board, carpet, or felt. Sections completed should be stored in a dry and rather dark room, and covered with canvas, net, or muslin, to keep them free from dust and flies, and to allow the air to circulate freely around them. By such means granulation may to a great extent be prevented. The temperature of such a room should not be allowed to fall below 60° Fahr.

Removing Section-cases.—1. Some appear to experience a difficulty in removing cases entire; and 2, one correspondent complains bitterly of burning his fingers while endeavouring to carry out our suggestion of steeping a cloth in carbolic solution, and spreading it over the super. To the former we reply that when the operation is performed according to our directions, in no single case have we met with the slightest difficulty, or suffered from a single sting. Not to recapitulate, let reference be made to our last Hints, July 8th, p. 303. But if smoke be preferred to carbolic solution, let the bees at home be driven *downwards* from the sections, and the whole case be removed while gently raising it by leverage during the smoking, and carrying it indoors as directed. Never smoke at the entrance, or the bees will be driven into the sections; act quietly, and let there be no jarring, no hurry. Following these directions, we rarely either get a sting or irritate the bees. Where several cases are 'tiered up,' one above the other, the uppermost case must be first removed, then the next in order in like manner, plenty of smoke being used, and the help of an assistant. The use of a veil gives confidence, but keep the hands uncovered, and, if afraid of stings, spray them with a very weak solution of carbolic acid. Working in all weathers with uncovered hands, and using the above-named solution, the skin becomes tough and hard, but very *brown*—O ye nymphs—and stings, if implanted—which they very rarely are—give us neither concern nor inconvenience. Being case-hardened, moreover, we can wring out a cloth, when steeped in the prescribed solution, without blistering our hands—in fact, with perfect impunity. We have repeatedly warned our readers of the dangerous nature of carbolic acid—and we cannot always be repeating warnings—when, therefore, complaint is made of blistering hands and skin, we can only suggest that more care should be used. Surely it is possible to find some means of squeezing dry a cloth without plunging the hands into the solution. In case of accident, a little oil rubbed on the spot immediately will prevent ill effects. Two ounces of carbolic acid, the same quantity of glycerine, and a quart of hot water, will mix well, and is the safest solution for general purposes, but it will blister the skin. In removing sections we much prefer it to smoke, and it is more effective. A long and strong goose-quilt soaked in the above, wiped dry and passed between the sections, will quickly dislodge every bee, and will leave neither scent, flavour, nor any other ill effects behind. When the section-cases are removed, a few passes of the feather over the tops of the frames, no matter how crowded they may be with bees, will cause

every bee to disappear at once, and what is more, will take all the sting out of them.

Extracting.—When honey is sealed and ripened in the hive, and it is desired to extract the honey from the sealed combs, which will generally be found to be those on the outsides of the hive, or at the back, according to the arrangement of the frames, the saturated feather, above recommended, will soon clear the combs of bees. Gently and slightly raise the quilt on either side, or both, passing the moistened feather beneath it; raise each frame in turn, slowly brushing off the bees on both sides with the feather, replenished as required: and as you approach the brood-nest, clear the sides and the bottom of the hive from bees in the same manner, driving them towards the centre. When the frames for extracting are all removed from the hive, fill up their places with empty frames, or laths, cut to fit, in order to prevent the exit or entrance of bees. After being extracted, the combs may be returned on the following day, to be cleansed by the bees, and finally removed, and stored when closing up the hives for winter. We prefer the evening for carrying out these suggestions, as affording less inducement to robbing, and an opportunity of extracting by daylight, and returning combs in the evening.

Queens Mating and Introduction.—The late fine weather has enabled all our young queens to mate successfully. We have not lost one, and all are laying. The earliest mated one began to lay about the middle of April, and has proved most prolific. Our columns are so full of the subject of 'Introduction' that we are really afraid of entering the arena. We beg, however, to assure Mr. Walker that the remarks in our last were intended to be *general*, and we simply wished to express disappointment at the uncertainty of introduction which, apparently, still exists, and for which, we think, there is little excuse.

Political Bees.—During the polling at Luton, Beds, on the 7th inst., we are informed that 'a swarm of bees belonging to Mr. Latchmore, banker, left their hive and made for the door of the Corn Exchange, which was the polling station, eventually settling on a lamp-post close by. The polling agents beat a hasty retreat, whilst the crowd fled in all directions. The excitement continued until the bees were captured.' Now, seeing that the successful candidate was a Mr. *Flowers*, a Gladstonite, the bees were probably descended from Mr. Walker's strain and not from Dr. Bartrum's, showing, as they decidedly did, a preference for *Flowers*, evidently wishing, as far as lay in their power, to further the cause of the G. O. M. and 'the dear old Scotland,' proving, in our opinion, the truth of the assertion, as set forth by the immortal Virgil, that as,—

> . . . 'Quidam . . .
> Esse apibus partem divinæ mentis, et haustus
> Æthereos dixere,'*

for how otherwise could they have divined that *Flowers* wished 'to send to Ireland the message of love and kindness!' Had they been allowed to remain on guard, upon the lamp-post, how they would have punished the 'wicked Tories' who came to oppose the 'message of love and mercy,' and who might truly have cried out, again in Virgil's words:—

> 'Illis ira modum supra est, lævæque venenum
> Morsibus inspirant, et spicula cæca relinquunt
> Affixæ venis, animasque in vulnere ponunt.'†

We have heard of bees being used for warlike purposes, such as hives of living bees being pitched into an enemy's vessel or ranks, also for dislodging a bailiff or a creditor, but it has been reserved for the Lutonites to utilise them for political purposes. We wonder whether Mr. Latchmore was cognisant of his bees' politics, or if they were the same as his own. Now we wish *all* our 'hints' to be '*useful*,' and certainly have no sinister purposes to serve, but we cannot help drawing from the above the conclusion, that, under certain circumstances, a few skeps of lively bees, on a warm summer's evening, towards the close of the poll, introduced at a polling station, in a close contest, might prove most effective. Truly we are educating our bees to some purpose!

* 'Some have said the bees are endowed with a part of the divine mind, and with heavenly influences.'

† 'They are angry beyond measure, and, being offended, infuse poison into their stings, and, clinging to the veins, leave (there) their buried darts, and lay down their lives in the wound.'

ASSOCIATIONS.

ROYAL VISIT TO THE BEE DEPARTMENT AT NORWICH.

The meeting of the Royal Agricultural Society at Norwich will be long remembered by bee-keepers owing to its having been selected for the visit of the Prince and Princess of Wales and their daughters and the interest the Royal family took in the bee-department. It was intimated to the Committee some time previous to the show that it was the desire of the Prince and Princess of Wales to visit the Bee Show, and arrangements were made accordingly. This department is very much larger and better situated than at any previous show, and being placed close to the Royal apartments was the first to be visited. The exhibition of hives, honey, and appliances, was a splendid one, by far the finest of any hitherto held in connexion with the Royal, and the competition keen enough to take the judges the whole day in deciding on their awards. We were certainly agreeably surprised to see such a fine display of honey, both in sections and jars, and we understand that most of it had been collected within the last three weeks.

Unfortunately, the weather, which had kept fine until Sunday, changed on Monday, and the judging was carried on in quite a deluge of rain. Those exhibitors who had taken the precaution to fix the Willesden waterproof paper under the canvas and over their exhibits escaped, but the goods of the others were completely soaked. Towards the evening the weather improved, and there were unmistakable signs of a fine day on the morrow. The Committee had arranged a programme which was, if possible, to be carried out, and the anxiety with which fine weather was hoped for can be well imagined.

Nothing was more striking or more pleasing than the contrast presented by the scene on Tuesday in comparison with that of the previous day. Instead of looming skies and falling rain, the fair weather and the anticipated visit of the Royal family brought a large company, of which ladies in gay summer dresses, so indispensable to the picturesqueness of outdoor gatherings, formed a considerable proportion. In the bee-exhibition tent, the exhibitors and the indefatigable Secretary, Mr. J. Huckle, had repaired the damages caused by the previous day's rain, and the Royal Standard was hoisted, as well as numerous other banners, indicating that this department was especially loyal. The Royal Agricultural Society had barricades erected from the Royal Pavilion to the bee-tent and shed, so that the public, except a privileged few, were kept out.

Mr. Cowan, who was appointed by the Royal Society as steward of the bee department and received an invitation to conduct the Royal party, saw that all the arrangements were complete and had taken to the bee-tent for the purpose of explanation some article from the stand of every exhibitor. The Rev. G. Raynor also consented to manipulate the bees. At twelve o'clock everything was ready, and the cheering in the distance gave notice of the approach of the Royal party. The

ground within the enclosure was rapidly cleared, and the chairman, Mr. T.W. Cowan, with the judges, the Revs. G. Raynor, G. Jenyns, J. L. Seager, and Mr. J. M. Hooker, were ready for the reception. Two members of the Committee, Captain Bush and Mr. Jonas, also came down for the occasion. It was nearly a quarter past twelve when the Prince and Princess drove up to the pavilion and at once proceeded to the bee-tent. Here Mr. Wilson introduced Mr. Cowan to their Royal Highnesses, who conducted them towards the gauze net and explained the operations. Within the enclosure was Mr. Raynor with Mr. Baldwin at hand to render any assistance that might have been necessary. At a given signal Mr. Raynor commenced to drive, tapping the hive gently and at regular intervals, very much to the amusement of the Princess, who expressed a fear that the operators would be stung.

As was to be expected from so experienced a bee-master the operation was performed in a quiet and perfect manner, not a bee was hurt, and the queen was captured in three minutes as she was running up into the top skep. She was placed in a box having a glass lid with a worker and handed to the Prince who was much interested. At this moment a drone was shown, the Prince opening the box for its introduction. As the operation proceeded Mr. Cowan pointed out the advantages of the new methods over the old ones, and likewise explained the object of these exhibitions and what the British Bee-keepers' Association was endeavouring to do. Mr. Raynor next commenced operations on a frame-hive of Carniolan bees lent by Mr. Neighbour for the occasion; and at this point of the proceedings the Prince left the Princess and the Princesses to attend a meeting of the Royal Society in a marquee adjoining.

After explaining some of the appliances Mr. Cowan presented the Princess, on behalf of the British Bee-keepers' Association, with copies of *Modern Bee-keeping* with the Skep pamphlets in English and Welsh bound together; also a handsomely bound volume of the Reports for 1885, and from the author *The Bee-keepers' Guide Book*, and Mr. Jenyns's *Book about Bees*, all of which her Royal Highness was graciously pleased to accept. Mr. Cowan next conducted the Princess to the exhibition shed, and here nearly an hour was spent in examining the principal exhibits, and every stand was visited. The bees in observatory hives were a great source of attraction and wonderment, and the observations made by the Princesses showed the lively interest they took in the question. The Royal party consisted of their Royal Highnesses the Prince and Princess of Wales, the Princesses Louise, Victoria, and Maud, the Duke and Duchess d'Otrante, Miss Knollys, the Duke of Richmond and Gordon, the Duke of Manchester, the Earl of Cathcart, the Earl of Feversham, the Earl of Lathom, Viscount Bridport, Lord Calthorpe, Lord Egerton of Tatton, Lord Fitzhardinge, Lord Moreton, Right Hon. Sir Massey Lopes, Bart., Colonel Kingscote, Mr. Wilson, Lieutenant-General Sir Dighton Probyn, Colonel A. Ellis, and others.

The judges, who also accompanied the suite, gave explanations of exhibits passed. When inspecting the honey, Mr. Cowan asked the Princess to accept from the British Bee-keepers' Association the first prize honey in sections; also the first prize extracted honey. This she was graciously pleased to do, and expressed a desire for some jars covered with wickerwork.

After a visit of an hour, the Princess of Wales thanked Mr. Cowan for his explanations and the British Bee-keepers' Association for the presents, and expressed the great pleasure it had given her to visit this show, and to learn something about bee-keeping. She had no idea it was so interesting, and thought all cottagers should keep bees. She had read a book on ants and also on bees, but she liked the latter much better, because the ants were selfish, and only worked for themselves, but the bees were more useful, and worked for others as well. The royal party then left the bee show, and retired to the pavilion amidst the hearty and loyal cheers of an enthusiastic crowd.

It is not surprising that the people of England should express their feelings in this way, and to accord to the heir to the throne, and his charming and deservedly popular Princess, that hearty reception which they invariably experience, and which is justly due as a recognition of the interest which they evince in all public and national undertakings, and on their readiness to bestow time and attention on every object sufficiently important and deserving that claims their support. This visit will have created a special interest in bee-keeping, and it cannot fail to be productive of much good.

Amongst the principal exhibitors who took prizes for hives or appliances were Messrs. Neighbour, Blow, Baldwin, Abbott, Howard, and Meadows, and Dines. The collections made a fine display, and were staged in a neat and attractive manner. There was a collection of bee flowers exhibited by Mr. Dobbie, but the Princess remarked that heather blossom was not amongst them. The principal prize-winners in the honey classes were Miss Gayton, Bee and Fruit-farming Company, Hy. Beswick, J. Howard, and F. T. Chevalier. At this show the schedules specified for the first time that the hives should be suitable for doubling, with arrangements for working sections on the storifying principle; and the show of hives at both 15*s.* and 10*s.* 6*d.* was remarkably good, some strong and useful hives being exhibited. We are also pleased to see that the committee required sections to be shown of a special size, viz., $4\frac{1}{4} \times 4\frac{1}{4}$ for 1-lb. sections, and we hope this may be taken as an earnest desire on their part to make this the standard size. The extracted honey was much finer than the average, and a better colour, and the neatness of the packing is a decided advance on previous shows. A complete list of the awards was published in last number of *Journal*.

BERKSHIRE BEE-KEEPERS' ASSOCIATION.

The Committee of the above Association have decided to hold their Annual Show this year in the Abbey Ruins, Reading, on Thursday, August 26th, by kind permission of the Mayor, Arthur Hill, Esq., who has also generously given a special prize of 2*l.* 2*s.* A most liberal prize schedule has been prepared, upwards of 50*l.* in prizes being offered, embracing almost every conceivable branch of the bee-keeping industry; and a special feature of this Association work is the development and encouragement of the use of honey, either in its natural state or in an applied form. With this in view, the Committee offer prizes for honey applied as good confectionery, beverages, medicines, &c., and also for plate and glass receptacles for honey. It is quite time, now that bee-keeping is becoming one of our national industries, the Association should endeavour to encourage the use of honey as a food, so as to find a ready market for the increased supply. It is hoped that manufacturers and bee-keepers generally will cordially support the Committee and make this one of the most successful shows of the season. The situation is excellent being in the centre of the town and near the railway stations. The enormous tent of the Reading Horticultural Society has been engaged for the occasion, which will afford abundance of room for all exhibitors. A first-class band will be in attendance, and arrangements have been made with Messrs. Brock & Co., the celebrated Crystal Palace pyrotechnics, to illuminate the Ruins and Grounds; and it is anticipated that the show will be visited by some thousands of people. In addition to the above, the Committee have arranged to hold a show of honey and appliances at Clewer, Windsor, in

connection with the Clewer Horticultural Society, on August 2nd (Bank holiday) under the auspices of the Windsor Branch, and which promises every success owing to the indefatigable effort of the Hon. District Secretary, the Rev. R. Errington, Clewer Rectory, Windsor, and an energetic committee, to whom application for prize schedules should be sent; entries close July 29th. Another show will be held on August 19th, at Faringdon, in connexion with the Faringdon Horticultural Society, under the able management of the Hon. District Secretary, Mr. F. Burrell, Faringdon. This is the first year that this Association has practically adopted the district system, and a large increase of members has been the result, and the above facts speak volumes for the system, and also for the far-seeing wisdom of the late Rev. H. R. Peel.

Application for prize schedules for the Annual County Show should be made to John Bowley, Esq., Hon. Sec., Eastern Avenue, Reading, or to the Assistant Secretary, A. D. Woodley, Donington Road, Reading.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

Swanmore Branch.

The first exhibition held by this young, flourishing Society took place on July 14th in Swanmore Park, kindly lent for the occasion by W. H. Myers, Esq., the esteemed President of the Society, who did all which lay in his power to make the show what it was—a glorious success. Certainly no pleasanter spot could be selected for an exhibition of this sort, the views obtained from the show-ground being most extensive and varied, the Isle of Wight being plainly seen, and the silver streak (the Solent) glistening in the distance, with the towers of Osborne in the background, plainly seen, rendered the picture in the southern horizon quite perfect; while on the north side of the park an extensive tract of woodland assists in the variation of the views obtained. The exhibition in question was rendered doubly attractive by the interesting gardens and grounds attached to the place being thrown open to the public, a circumstance which assisted, no doubt, in bringing many people to the show. The worthy hostess, too, materially rendered valuable aid by having an 'At Home,' which was largely attended by the *élite* of the neighbourhood.

But to return to the show. As such a small quantity of honey was shown at the parent Society's exhibition, held recently at Portsmouth, many feared that this would be the case on the date named (July 14th); but, owing to the hot weather experienced for a fortnight previous to the show, over 6 cwt. of honey were gathered in the neighbourhood and shown at the exhibition, thus proving once more what a capital collecting district it is for honey. So numerous were the entries that additional tent-room had to be secured at the last moment. The honey, both in supers and extracted, was neatly arranged on a centre table running the length of the tent, 60 feet, the top of the table being covered with a white cloth and the sides were draped with cloth of a crimson hue, which rendered the whole attractive, the honey in general being capital in quality, and some of it extra good, which must have given the judges no small amount of trouble to justify their awards.

'For the best 12 lbs. of super honey, in sections of either 1 lb. or 2 lbs. each. Open to all.' This drew forth the largest number of entries (seventeen). Eventually the first prize was awarded to Mr. W. Woodley, World's End, Newbury, Berks, for 1 lb. sections. There is no doubt but that the way in which it was staged assisted in some measure to obtain the award; each super was enclosed on two sides with squares of glass, narrow strips of white paper being fastened on, which held the glass in position. This to a casual observer assisted materially in hiding any defects around the edges of each super, such as unsealed cells, &c. Had Miss Evelyn Myers adopted the same system of staging with her second prize honey in this class no doubt it would have been rendered more attractive and would have run the first prize close. Her honey was of excellent quality, and her position in the class must have been pleasing to herself, seeing that this is her first season as a bee-keeper.

The extracted honey, which won for Mr. G. Horner, Swanmore, the first prize, has rarely been excelled, so good in quality was it, being closely followed by 'Miss Bessie Martin, a youthful apiarist.' Miss H. C. Myers staged a capital lot of last season's honey, showing how well it can be kept in preservation.

Bee appliances were largely contributed, almost everything that could assist bee-keepers being shown, Mr. S. Dickens, Hadley Barnet, being awarded first prize, with a complete collection. Owing to the gusty weather at times prevailing, the manipulation of bees was carried out under unfavourable conditions at times, still, the lessons given by E. H. Bellairs, Esq., and the Rev. W. E. Medlicott, and the Rev. R. Parker, could not fail to be instructive and pleasing to the numerous onlookers. A very large exhibit of beeswax was the result of fifteen entries, which made quite an imposing array, and was of excellent quality.

Mr. S. Fry, chemist, Bishop's Waltham, staged a magnificent display of beverages, such as ginger-beer, lime-juice cordial, lemonade, &c., &c., all made from honey, showing the innumerable uses that honey can be put to. The exhibit was awarded a special first prize. The same gentleman was awarded a bronze medal for an exhibit of the same character at the late Portsmouth Show.

The onerous duties of judging were got through in excellent time, quite as soon as was necessary for the arrival of visitors, which is quite pleasant to record. This is as it should be; delays are often caused in this department not by the judges themselves, but by the executive not having all in readiness for the judges at the proper time. 'Great credit' is due to the judges on this occasion, E. H. Bellairs, Esq., and Rev. R. Parker, Wickham, for the painstaking manner in which they got through their very difficult task. The arduous duties of Hon. Secretary were indefatigably carried out by Mr. H. W. West, who has a considerable amount of 'go' in him. On this occasion he was ably and kindly assisted by the Rev. W. E. Medlicott and Mr. C. Martin. We append a list of the awards.

Class I. For the best exhibition of Bee Furniture (no two articles alike): 1, Mr. S. Dickens, Hadley Barnet; 2, Messrs. Abbott Bros., Southall, Middlesex; 3, Mr. A. Privett, Bishops Waltham. II. For the best Cottager's Hive (complete), price not to exceed 10*s.* 6*d.* (Swanmore Branch only): 1, Mr. G. Horner; 2, Mr. W. Parsons, Swanmore. III. For the best Section (complete), open to all: 1, Mr. S. Dickens, Hadley Barnet; 2, Mr. W. Candy, Long Common, Botley; very highly commended, Miss Myers, Swanmore House. IV. For the best 12 lbs. of Super Honey in Sections of either 1 or 2 lbs. each (open to all): 1, Mr. William Woodley, World's End, Newbury, Berks; 2, Miss E. E. Myers, Swanmore House; 3 (equal), Rev. W. E. Medlicott and Mr. T. Giles, Cowsfield, Salisbury. V. For the best 12 lbs. of Super Honey in Sections of either 1 or 2 lbs. each (confined to cottage and artizan members of Swanmore Branch only): 1, W. G. E. West, Swanmore Park; 2, G. Horner; 3, W. G. Horner. VI. For the best 12 lbs. of Extracted Honey in either 1 or 2 lb. Bottles (open to all): 1, Mr. W. Candy; 2, Mr. Wm. Woodley; 3, Mr. S. Dickens. VII. Same as above (Swanmore Branch members only): 1, Mr. G. Horner; 2, Miss Bessie Martin; 3, Mr. W. Candy. VIII. For the largest and best display of Honey, Comb and Extracted, the produce of one Apiary (open to all): 1, Rev. W. E. Medlicott; 2, Mr. W. Candy; 3, Mr. E. Ainsley. IX. For the best 24 lbs. of Honey, 12 lbs. in Sections and 12 lbs. Extracted (Members only): 1, Mr. W. Candy; Equal 2, Rev. W. E. Medlicott and Mr. E. Ainsley; 3, Mr.

W. Privett. X For the best Super worked on the top of a Straw Skep (Members only): 2, Mr. F. Sparksman, of Bishops Waltham. XI. No entry. XII. For the best and strongest Skep of Bees, not being a swarm of this year (Cottage and Artisan Members only): 1, Mr. E. Singleton, Swanmore; 2, Mr. W. Shepherd, Droxford; 3, G. Horner. XIII. For the Cottager or Artizan who shall drive a Skep of Bees and capture the Queen in the quickest and best manner (open to all): 1, Withheld: Equal 2, Mr. W. Candy, Botly, and Mr. G. Horner, Swanmore; no third. XIV. For the best piece of Beeswax not less than 3 lbs. in weight: 1, Mr. W. Burgess, Hinton, Christchurch; 2, Mr. G. Forward, Newtown, Christchurch; 3, Mr. W. Woodley, World's End, Newbury.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom amounted as follows:—May, 1886, 1541*l.*; June, 1886, 2900*l.*

[From the Statistic Office Returns, supplied through E. H. Bellairs, Esq., Wingfield House, Christchurch, Hants.]

METAL FRAME-ENDS.

[459.] I quite agree with Mr. Hooker as to the points of excellence in metal frame-ends, but would add others which he omits. The first is that no part of the shoulders should be within the hive walls, but when the frames are in position they should be flush with them. The second is that the ⅛-inch distance should be kept by a guide, shaped as an inclined plane so that the frames are self-adjusting and drop into their places with no chance of one end being stuck up. The third, that they should be of such a form as to reduce the amount of possible propolisation to a minimum, and that the frames should be capable of being removed without jar. Mr. Hooker asks, 'Do you know that the patented metal end of Mr. Lyon is exactly the same as that which has been for some time past manufactured by Mr. Neighbour?'

As you have allowed Mr. Hooker to raise this question I will ask your readers to call to mind the history of metal ends. At the South Kensington Show of the B. B. K. A., 1882, I showed, and received a medal for, my original invention of metal ends to which I gave the name of 'Dr. Pine's' ends. In this pattern the top bars of the frames required bevelling to enter the recess. In all other respects they possessed all the points mentioned by Mr. Hooker, and the others as above. The ⅛-inch distance keeper was a triangular piece of metal being the higher development of the diagonal French nail which I had used for years, exhibited in the frames of cottage hives shown at many places in 1880, and described in my paper on Cottager's Hives read before the B. B. K. A., in 1881. These ends attracted great attention and were at once adopted by several hive-makers, especially by Mr. Blow and Mr. Neighbour, who both ordered large quantities at the Show. Then came the efforts of sundry hive-makers, *after I had given them the idea*, to try and vary my pattern;—not to improve, as every one of the variations introduced some defect, but to avoid paying me a legitimate profit on my invention.

To Mr. Blow belongs the honour (?) of being the first to 'invent' a pattern with a metal bar across the top bar of the frame which raised the quilts and section-racks as pointed out by Mr. Hooker and caused great propolisation. At Mr. Neighbour's request, I gave him an agency for my ends, advertising that they were to be obtained from him, and referring intending purchasers to him; also, giving him a preferential discount. In October, 1884, I invented my present pattern, and, the patent law having been altered, took steps to patent it. The death of the patent agent to whom I had entrusted the business delayed the completion of the patent until far into 1885, and pending completion I was unable to make use of it. That I am the inventor not only of my patented ends but of metal frame-ends, generally, no one can deny.

As I have entered my ends for exhibition at the coming Show at South Kensington, your readers who have not seen them will be able to judge of their merits.

I had no idea, until this year, of the magnitude of the bee-keeping industry. I have the addresses of upwards of 130 hive-makers and dealers. I have sent out week after week from fifty to one hundred gross of my ends. The sales for the first six months of 1886 amount to nearly twelve hundred gross. Upwards of one hundred and seventy-two thousand ends! Enough to furnish between eight and nine thousand hives of ten frames each. One hive-maker alone having had enough to furnish nearly one thousand hives. As I suppose the other makers sell some ends, the aggregate number sold is astonishing.—F. Lyon.

'THE LAW' AT FAULT.

[460.] In my last I promised to give an account of what followed the release from 'balling' of the queen introduced into a queenless and broodless stock according to 'the law,' as published by 'A. H. B. K.', and I regret to say that it has not been satisfactory. As stated in my last (p. 317) the queen was at liberty on Sunday, the 11th inst., having been 'balled' from the previous Thursday, and she was at liberty on Monday, the bees apparently taking no notice of her, but I could see no eggs. Tuesday I did not look into the hive; but on Wednesday, to-day, on looking I found a few eggs and a queen-cell partly formed on one of them, but no queen, she having departed. I dare say my experiment will not be considered of much value (and one trial ought never to be held conclusive in anything connected with bee-keeping), as from the ball of bees getting outside the hive on two occasions, when I had to put them back, it may be held that they were not left undisturbed, as it may be argued they ought to have been, but from the fact of the bees balling the queen at the moment of introduction, and repeating that process twice after she had been released from their 'loving' embrace, I feel satisfied in my own mind that the 'law' quoted by 'A. H. B. K.' cannot be relied on. I imagine that 'law' must have been 'laid down' in the days of 'fixism,' when the process here described enabled the bees to raise a young queen from the eggs laid by her poor mauled predecessor, and the stock surviving her by virtue of the young queen was held to be proof of the acceptation of the queen 'run in.' I have tried the running-in process a good many times, but never have found it satisfactory or commendable.—C. N. Abbott, *July* 14.

QUEEN INTRODUCTION.

[461.] Mr. Walker thinks it 'a most extraordinary thing, and hard to understand,' why some of your correspondents 'cannot write without imputing bad motives,' but I think he may take it for granted that they only impute bad motives who are incapable of good ones, and that the best course to adopt with such people is to let them severely alone, as I shall henceforth the blatant quibbler (see the second paragraph of his letter, page 317) whose big 'I' is so egregiously italicised in his third paragraph, and who does not scruple to 'stab' from behind a hedge. My letter of the 14th was written be-

fore receipt of *Journal* for last week; but, your correspondent's assertions notwithstanding, it may interest some of your readers if I report how I queened the hive of truculent old bees, who were not amenable to the 'LAW' so gramiloquently laid down by your correspondent.

On discovering the absence of the queen on Wednesday (14th), I removed all the combs from the hive, covered the body box temporarily, and at once put a queen, in a cage, at the back corner of the hive amongst the bees. The same night I released her, and next morning I gave back all the combs, and covered the hive up properly, and now (the 18th) there are eggs and young larvæ in the cells, the offspring of the queen introduced on Wednesday night.

It may be further interesting to tell how a valuable queen was treated that had fallen into the hands of a gentleman who had no bees available to introduce her to. He came here in haste for a small swarm without a queen. I caught the queen of a hive, caged her, and put her into a swarm-box through a hole made in the bottom of the box (the top when in use), and shook about a couple of pounds of bees into the box, which bees quickly went up and clustered. I then fastened up the box, removed the queen and cage, returned the queen to her hive, and handed the bees over to the applicant, giving him directions to put his new queen into a tubular cage, and put her down amongst the bees as I had their mother-queen in the first instance, with the assurance that the next evening he could release her and hive his swarm in safety. This he did, and I enclose his letter of thanks (dated July 8th), not for publication, but to satisfy you, sir, that I have not pirated any of the tunes played [by the big drum o' the band.—C. N. ABBOTT, *Southall, July* 18.

[The letter referred to was duly received.—ED.]

QUEEN INTRODUCTION.

[462.] A great deal is being said and written on this vexed and difficult question, and it seems to me to be only a repetition of the fable of the 'Cottagers and the Chameleon,' and that our correspondents are both right and wrong. Circumstances should always be taken into consideration and allowed for in introducing queens, and no hard or fast line drawn, and we should hear considerably less of failures, always remembering that a stock that has been queenless some time, with no brood or young bees, is by far the most difficult to deal with. My experience also teaches me that hybrids are more inclined to ball a queen (of any race) than pure bred bees.

I have used all kinds of queen-cages, with various results; also introduced them direct from the box they have travelled in by boring a ⅜-inch hole in same, and placing over feed-hole; but the only way that I have had no loss or difficulty with has been by immersing the queen (to be introduced) in honey or syrup, and *placing* her among the bees on the combs, before doing which I have shaken them all on to bottom of hive, and allowed them to run among combs, which very much demoralises them; and in every case they have at once commenced to clean her majesty, and in the course of half an hour she has been found taking her usual walk among the workers. I have noticed no sign of them attempting to seize and 'ball' her. Young fertilised queens are also better received than those that are older, and unfertilised queens are allowed to run in at the entrance, and in every instance I have tried are at once gladly received. —G. H. G., *Bromsgrove, July* 17, 1886.

QUEEN INTRODUCTION.

[463.] Mr. Abbott, page 316, complains that 'S.L.B.' did not quote him correctly.

> 'Oh wad some power the giftie gie us
> To see oursels as ithers see us!'

When I read further on, I found that Mr. Abbott not only did not quote me correctly, but misconstrued what he did give. I did not suggest, as he says I did, that he had tried the new ways of introduction. In fact, his previous letter gave me the impression that he was so enamoured with the cage, 'which bears his own name,' that other and simpler systems were not worth a trial. What I did say was that either Mr. Abbott had tried the newer ways or he had not. If the former, I presumed it was a success; if the latter he was scarcely competent to give the best advice on the subject. Mr. Abbott has again written, but with so much ambiguity that it is still impossible to tell whether he has tried the newer methods referred to. Of course, a man is at liberty to withhold any information he may possess with regard either to the failure or success of a system, but when he occupies the position of a public adviser he is, I think, in duty bound to give the fullest information possible. I, for one, should be grateful if Mr. Abbott would retail to us some of the failures he *suggests* he has met with in the newer methods.

Again Mr. Abbott misquotes, then settles the idea with calling it an absurdity. I used the word 'system' not 'mode'—the former being more definite and implying a mode which has been practised until it has become a formulated system; and instead of dismissing the statement that 'as a rule all systems are perfectly safe and certain' with the word absurd he would give us one or two instances of systems which generally fail, he will confer a public benefit by teaching us to avoid them.

He says my suggestion, that he has not much confidence in his own system because he looks after the queen soon after her liberation, is 'a gratuitous sneer which he can afford to disregard.' But he does not disregard it, for he commences to argue the point by an inappropriate illustration. He says he has learned to try a door or a safe after locking to see if all is safe. Now had this applied to the external part of the hive it would have done, but the argument was about the inmates; and if I may give an analogy I should say that if Mr. A., or B., or C., had a stranger come to his house and about an hour after her introduction had to leave his business to see that the visitor was being well treated, it would certainly imply that he had not much confidence in the inmates or his system of introduction and management.

I believe, Mr. Editor, that this looking after the queen after she is released is the occasion chiefly of her majesty being balled. Bees have a dislike to being interfered with, and the caging process cannot be gone through without a good deal of interference. It is the fatal fault of queen-cages that the bees have to be disturbed both when the cage is inserted and when the queen is released. If I used a cage I should look after her as Mr. Abbott does, because the irritation raised in the bees is frequently exerted upon the queen unless honey is coming in abundantly, whether she be new to the hive or not. There seem to be two or three conditions essential to the safe introduction. First, the bees must be in a calm state, with no idea that they have to defend themselves against enemies and strangers. Secondly, the queen must be free from the influence of other hives and in such condition that she is willing to receive the natural attentions of her new subjects. These conditions are fully complied with in Simmins' method, and I am pleased to see he has introduced an African queen by this process. It stands in bright contrast to other failures we read of.—JOHN RUDGE.

ANOTHER MODE OF QUEEN INTRODUCTION.

[464.] It is not my intention at present to enter into the controversy on queen introduction, but to give to bee-keepers a mode that is simple, safe, and rational. It is not new—here, at least—but has been practised for years, and never known to fail if there was not another live queen in the hive. It has long been known that it

is by smell that bees know each other, and by scenting them any number of hives can be united. It is the same with queens; it is by smell they are known, and by scenting the bees and queen with the same scent any queen can be introduced at once, or all the queens of an apiary changed to other hives.

Mode.—Scent thin sugar and water with oil of peppermint; remove the quilt, and pour it from a vessel with a small spout between the combs; remove the queen, if there is one, and put the strange queen on top of bars, and pour a little of the syrup on her, and put on the quilt after she has gone down.—JAS. SADDLER.

RE-QUEENING STOCKS.

[465.] Will you allow me to endorse the opinions expressed by yourself and Mr. Simmins as to the desirability of re-queening stocks before the time when bees would naturally do so if left to their own resources? Young queens are the most prolific; their progeny always appear to me to work the most vigorously, and they are more likely to keep the brood-nest filled with eggs and brood, and so prevent honey being stored below which should be put into the sections. Of course colonies will generally raise up a new queen for themselves before the old one is quite done for; but the point is, will not a bee-keeper obtain better results by providing that every colony in his apiary shall be headed by a prolific queen in her prime, than by having a large proportion of his colonies producing annually a smaller surplus, and in waiting for his bees to discover for themselves that they have been retrogressing for some time, and that to prolong their very existence a fresh sovereign is required? Queens will live a number of years and have been known to do well for half-a-dozen; but such is quite the exception: and as far as my experience goes they more often show signs of waning after the second year than not. Allowing that a queen may head a colony in a skep for four or five years without falling off very appreciably, it must be remembered that a twelve standard frame-hive is two to three times the capacity of a skep, and in order to keep up the strength of such hive her majesty lives under very high pressure, which must of necessity, one would think, curtail her useful career. What would be said of a fruit-grower who allowed his strawberry plants to go on without renewal for ten years because they continued to bear some fruit? or what of a poultry breeder who kept hens of six years old for profit, because they occasionally produced an egg? Not to re-queen, and that with queens of strains that are known to possess good qualities, is to pursue one of the worst features of the 'let-alone' policy.—D. A. THOMAS, *Ovenden, Sevenoaks, 17th July.*

SUPERSEDING QUEENS. [443.]

[466.] I am not aware that I said anything in my letter of the 24th June [399] that could reasonably be construed into an objection on my part to the keeping of young queens. It seems, however, that Mr. Simmins has put this construction on it. Nevertheless, I have yet to learn that it is only queens of two years old that are *vigorous and prolific*, and am quite content to know that in this opinion I am in accord with many of the oldest, largest, most practical and scientific bee-keepers of our day, whose length of experience and consequent opportunities of forming an opinion as to queens being of *'very little use after the end of the second year,'* must be greater than Mr. Simmins's can possibly be. Many of the American bee-keepers, whose written opinions I quoted, have very large apiaries, keeping bees as a profitable industry, having probably twenty colonies to every one that Mr. Simmins has, and whose whole time is given up to the production of honey and the study of the best means to obtain the largest return. Surely these are the men whose practical advice should be followed; they have been to the front for years, and are looked up to as authorities on the other side of the Atlantic. Depend upon it, in bee-keeping, as in most other things, an ounce of practice is better than a ton of theory. Yet Mr. Simmins says, 'It is no reason why it should be the plan which gives the best results; on the contrary, it simply shows that in following *the few* who advise such a course in their endeavour to obtain the highest returns with the minimum of labour, such men are practising very poor economy, and sooner or later must see their error.'

I cannot myself see the false '*economy*' or the '*error*' in endeavouring to work in such a way as 'to obtain the highest returns with the minimum of labour.' Is it not the fact that it is '*the few*' who think it wise to supersede a prolific queen at the end of the second year without her showing any want of vigour; and the many that advocate keeping queens *until* they become unprolific or show signs of failing powers? With young queens, which should in every well-ordered apiary be kept in reserve, the delay caused by superseding will be very small and the *economy* very great.—JOHN M. HOOKER.

STRAWBERRIES AND CREAM.

[467.] At this season of the year this is one of the most delicious dishes one can have. Sugar is generally used to sweeten and bring out the flavour of the strawberries, but if new honey is used instead of the sugar, it will be found a great improvement.—J. M. H.

LIGHT WEIGHTS OF SECTIONS.

[468.] I am at a loss to account for the very light weights of my sections. They are well finished, grown with dividers, and the weight of the sections itself I always deduct. I have so far taken seventy-five sections, weighing 63 lbs., an average of not quite 13½ ounces. My lowest weight is 10½ ounces, my highest, 15½ ounces, net weights. It has been the same with me in other years.—RARE SIPS.

[If your sections are those in general use, viz., 4¼ × 4¼ × 2 in., and the usual thin dividers are used, we cannot imagine the reason why they are so light as to average only 13½ ounces each. It is just possible that you did not give room enough. Where the population of the hive is very large we have known the section-cases to be so crowded with bees that the sections, in consequence, were not fully built out, but in such cases swarming always followed. Possibly if you had 'tiered up,' placing another section-case under the first, the sections would have been better filled, for *filled* they could not have been if only weighing 13½ ounces each and the boxes being the correct size.—ED.]

A PLEA FOR THE TITS.

[469.] I had much pleasure to note in last *Journal* that a gentleman of such understanding and experience as Mr. A. B. Herbert has taken the trouble to support our feathered friends. They are very much in need of a champion. It is astonishing how many people, from a hasty and careless view, form a wrong idea of the poor bird's habits; then rush to print, causing great numbers to be slain. Now, what Mr. Herbert has written accords with what I have myself seen. I have watched for hours the tits picking up *dead* bees, then flying to a branch, pinch off the head and part of abdomen, eating the rest. These birds are very necessary to both gardener and agriculturist, and I think it a pity they should be killed because a few ignorant people spread abroad that they destroy bees. I think, in humanity's sake, we should try to settle this question as soon as possible.—R. W., *Glasgow.*

Echoes from the Hives.

Somersham, Hunts, July 13th.—Our season has invariably closed about June 26th, and on that day I commenced a report with such a gloomy account of this year's work that I was afraid to send it until I had better news to add. Up to June 26 not a section had been worked in the district, and no surplus had in any way been taken, as far as I could hear; the only cry was, 'I've had enough of your new method; I've had neither swarms nor honey.' A reply, 'Well, my friend, I am as badly off as you are, and no doubt a greater sufferer,' was not at all soothing. Having large orchards in the neighbourhood we look for good supers, weather permitting, in May and the early part of June, but this year, unfavourable weather following a severe and protracted winter, the results have been disheartening. One early swarm I treated on the Simmins' non-swarming system, but although a large one and crowded, their time was employed in working combs below until June 27, when a spell of very fine weather sent them into two of Abbott's Cottager's supers, which are now filled and sealed. My Anglo-Cyprian hive was the only other hive supered. The two crates containing thirty-six 1-lb. sections have been on a strong stock for some time, but not until June 26 were they taken to, and now they are all completed. Where stocks were kept ready for supering and crowded at the beginning of the last fortnight, which I am afraid was not the case generally, a fair quantity of honey will have been secured. Stocks are crammed with honey and the queens are crowded out, except, particularly with skeps, where supers have been used. I am afraid that now all gathering of surplus is over, and all we can expect to the end of the season is the filling of combs for the coming winter. I can say without hesitation that this is the worst season I have ever known, and that it is the last with many, who are thoroughly disheartened, I am afraid is only too true. There will not, I think, be any outcry against low prices for English honey this year, and those who have secured a good harvest will consider themselves fortunate in being able to take advantage of good prices.—C. N. White, *Hon. Sec., Hants B. K. A.*

Cheltenham, Gloucestershire, July 13th.—A wonderful change has been the result of barely a fortnight's summer weather. The following will more than evince the great activity shown by our pets, the bees. I had removed from two hives to-day (both of which I was compelled to feed right to the close of June) 84 lbs. of splendid section honey, and have other stocks following in like trim. These colonies are each headed by queens bred last June, and are more than equal to the work of eleven brood-combs (in one instance having invaded the super). Our 'garden town' has an untold number of hives in which the bees are now simply roaring, and bids fair, if weather still holds up, to yet make a good harvest.—T. Fowler.

Lismore, July 17th.—The apiary has kept me busy since last 'Echo.' In spite of tiering up, one broiling day two hives swarmed. As they had a lot of super honey nearly finished, and were both possessed of fine one-year-old queens, I returned both swarms, giving body-boxes, one with nine, the other five frames, with 2-in. foundation, cutting out queen-cells. I never saw such a lot of brood as one of them had. Eight bars quite covered with worker-brood in all stages, and the inside of the two end bars also sheeted with it. Some drone brood on outside of end bars. Work in supers slackened, but did not cease, for a week or more; but this was the case in all the hives, for the white clover gave out. The day before yesterday, July 15th, work was resumed in all my hives as hard as ever, owing to the limes. My best hive has not swarmed, neither has my worst, a lazy, idle lot, quite numerous enough to have done heaps of work, yet they have only filled one crate of sections, and given no swarm that I know of. My best hive is working away in five crates of sections, and I hope it will not swarm, as it has a fine young queen one year old. All swarms, stray or bought, I have sent to the moors. The hives there are doing splendidly. I have some skeps there, late swarms, June 20th and thereabouts, working nicely in sections. Heather beginning to show plenty of bloom. I have put several stray casts into skeps to provide young queens for any colonies that may be queenless after the winter. When the white clover gave out, all the hives grew very slack as to work in supers, but since the limes have come out they are as busy as ever. To-day, July 17th, is pouring wet. I hope we shall have some more fine weather, for all our hives are in capital working order. —Irish Novice.

South Derbyshire, July 19th.—With a few days excepted, since the beginning of July honey has been coming in very fast. Have taken a good many sections and the extractor has plenty of work to do. My bees are in splendid condition, even the weakling covering only one frame in April is crowded on eleven now, and contained quite 20 lbs. of honey. I never saw so much white clover before as there is this year.—M. J. Astle.

Holme, near Peterborough, July 19th.—The past eight or ten days have sadly prevented surplus honey gathering, bees in some instances quite forsaking super work. Yesterday (Sunday) was quite a reinstating day; the less strong colonies all brought back to original work, and the full strength ones have set well to work completing their three-tiered section-crates. Limes are in full bloom, and their fragrance is quite enjoyable after the late rains, which rains unhappily were very ungenial so far as temperature. The second clover bloom, limes, and late mustard in this district will yet be of great service should sunshine and warm nights continue. My last week's sojourn at Norwich prevented a last week's echo, which, had I been home, could not have been hopeful.—J. H. Howard.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

A. F. J.—*Chloroform for Condemned Bees.*—We advise you not to attempt it, or, in all likelihood, you will destroy the bees. Except in the warmest weather bees recover very slowly from the effects of chloroform, and not always even then. We recommend driving as far preferable.

A Limerick Bee Man.—We will see if, after the South Kensington Show, we can comply with your request, as we hope to see on that occasion some of the hives of the description mentioned.

Sligo.—1. *Removing Bees from a Hole in a Wall.*—Either by removing a part of the ceiling below the bees, or a part of the floor above them, cutting out the combs, brushing off the bees into a skep, and securing and caging the queen with them. It is best to leave the operation until September, when it should be performed by an expert. 2. For removing hives to heather see 'Useful Hints,' page 326.

Cornish.—In tiering sections on hives the empty ones should be put under those which are filled, and next to the frames.

R. K.—The sugar forwarded is a good sample of Demerara sugar, and would answer the purpose of dry sugar feeding. Granulated crystal sugar is the best for making syrup.

J. B.—1. *Unicomb Observatory Hive.*—The distance between the glass sides should not exceed 1¾ inches. Single glass is sufficient, but fit shutters lined with flannel against the glass to retain the heat when carrying to and fro at night. There should be a space of ¼ inch between the top bar and the lid, which should be provided with a hole covered with perforated zinc for ventilation and feeding if necessary. Below the comb should be a box with perforated zinc sides for a flight-chamber. 2. Put into it a comb containing brood in all stages and some honey. If the queen is not on the selected comb, find her and put her in. 3. The bees will be a little excited at first, but will soon quiet down. 4. If the queen is only away from the stock hive for a few hours, say from morning till night, you may simply separate the frames and return that which you have exhibited without trouble,

but if queen-cells have been commenced, destroy them and cage the queen for twenty-four hours.

J. L.—*Bees swarming from a Bar or Box Hive.*—As your combs are not removeable, you could not do anything to prevent the swarm issuing. Probably they had prepared for swarming before you supered them.

J. B. S.—1. *Position of Sections as to Frames.*—It is a matter of opinion; most bee-keepers, however, put them the same way as the frames, as you sketch No. 2. 2. *Uncapping honey.*—If you simply uncap it and leave it in the hive, the bees will seal it again, but if you remove the frames containing honey (without brood) to the back of the dummy and uncap it, they will look upon it as a prize and carry it into the hive. If the remaining combs are occupied by brood, they will most likely store it in the sections. 3. *Bumping.*—It makes no difference whether the skeps are flat-topped or round-topped, the combs will break out at the top in either case.

J. P. Allen.—*Comb affected.*—The piece of comb sent was completely mashed, in consequence of its being sent to Mr. Huckle and then forwarded to Norwich. Please send another piece properly packed to the *Bee Journal* Office, *c/o* Messrs. Strangeways & Sons, Tower Street, St. Martin's Lane, London.—Place a lump of camphor in the hive you say has several cells affected.

R. L. R.—*Working for Sections at a distance from Home.*—You can put on another rack, raise the one partly filled and place the fresh one under it.

L. S.—1 and 3. *Building up Nucleus into a Stock.*—There will not be time for a three-frame nucleus to become fit for wintering without assistance. If you can spare a frame or two of hatching brood from other hives, give them to the nucleus, or, if not, when the honey-flow is over, feed them gently and give frames of foundation one at a time. 2. *Combs with Stains.*—Without seeing the stains we cannot say the cause; probably the stock died of dysentery. Scrape off the stained parts down to the midrib, and also scrape out the few dead bees. The bees will soon repair the combs, and they will be none the worse. 1. *Tiering up.*—Any hive will be suitable for tiering up if the upper hive can be placed upon the frames. If the outer walls of the lower hive do not allow this, make a bottomless box 14½ inches wide and any length to suit the number of frames to use as the upper hive.

J. T. Marsh, R. E. Creswell, H. Jeanes, and others, will find replies to their queries in 'Useful Hints.'

Novice.—We do not think that the swarm seen by you could have emanated from either of your hives. The probability is that it was a vagrant swarm.

A Novice, *Skibbereen.*—The matter of selection of queens may be left to the bees themselves.

J. W. B.—1. You may safely give the unfinished sections to another stock to complete. 2. We incline to the opinion that when the time arrives the drones have a presentiment that their work is done, and that they will soon receive their mittimus from the workers; and their shy and timid appearance then is very different from that presented by them when they are gaily and guilelessly airing themselves in front of hive.

W. K. K.—1. *Ripeness of Honey.*—Honey is not really ripe enough to extract until sealed, or until the seals are commenced from the edges of the cells. If you do not wish to wait for this before extracting, you should either artificially ripen the honey, or let it remain in a deep vessel, from which the lower and riper layer can be drawn off from the bottom. 2. *Swarm returning to the Hive.*—The reason was, that the queen was lost or got killed in hiving them. They are now headed by a young queen, and may or may not swarm out again. If they do, more swarms than one may issue at once, or at short intervals.

Miss J. M.—*Supered Skeps.*—The swarm of this year not having filled the skep with comb cannot be expected to work in supers until it has done so. The other stock, having thrown a large swarm, has not population enough to work in the super at present. Queen-excluder would not prevent the bees taking to the supers.

E. C.—1. *Driving.*—The first week in August will not be too early, if the owner will let you do it, and the bees will be all the better able to establish themselves in your hives for the winter. 2. *Hiving Driven Bees.*—You will find it better to let them run in at the entrance. Hive them in the evening. If you cannot pick out the queen, they will fight it out, and one will survive.

J. Robinson.—*Carbolic Acid.*—We are sorry to hear of your mishap. The method of mixing carbolic acid with water has been so repeatedly mentioned in the *Journal* that we thought all our readers would have noted it. The water must be *hot*, and if it is desired to *thoroughly* amalgamate the two, a little glycerine must be used. Had you mixed this in a large basin, stirring well with spoon or stick, and thoroughly saturating the calico, the wringing out with the hands would have caused no inconvenience. We have frequently warned our readers that carbolic acid, being so very powerful an acid, requires great care in the using. In case of getting a little on the hands at any time, oil, or grease of any kind, rubbed on immediately will prevent any ill effects. We consider 'Calvert's Carbolic Acid, No. 5,' the best, and it amalgamates more easily than other kinds with water, but have never found any difficulty with the ordinary kind sold by all chemists for disinfecting purposes.

E. Bullen.—*Colour of Honey.*—The honey forwarded is rich and of excellent flavour. The turbid colour is due to a large admixture of lime honey. This discoloration is an offence to the eye, and reduces its saleability considerably.

John Bull.—*Honey Pamphlet.*—The B. B. K. A. have anticipated your suggestion. They have, sometime ago, published a leaflet entitled *Honey as Food*, which may be obtained from Mr. Huckle; price 5*s.* per 1000. 2. *Honey Company.*—We are not surprised at your desire to obtain some knowledge of the progress of the Honey Company. In reply to our inquiries, we are informed that the general meeting will be held shortly, of which due notice will be forwarded to the shareholders.

*** *We are obliged to postpone several communications till our next issue.*

Bee-keeping in the Wisbech District.—On Thursday and Friday last, Mr. J. H. Howard, of Holme, near Peterborough, expert of the British Bee-keepers' Association, paid a visit to the members of the County Association who live in the Wisbech district. Mr. James Dann, hon. local secretary, accompanied Mr. Howard, and bee-keepers in Tydd St. Giles, Tydd St. Mary, Tilney, Walpole, Walton, Emneth, Upwell, and Wisbech were visited. A correspondent sends us the following notes upon their inspection:—'Many stocks were gone through, and much advice given, which, if acted upon, should prove as beneficial as that given and acted upon during Mr. Howard's autumn visit last year. Several colonies were in themselves proof of this, and especially one apiary, where there is sufficient strength to gather 20 cwt. of honey. The expert's report was, on the whole, very fanourable, although there are several apiaries capable of improvement. The great feature in Mr. Howard's visit was his special method of quieting bees, which was shown to the persons visited, and in the interests of the County Association it will be well if the members do not give free of cost the information, but make it a point in getting fresh members, as if the spring and autumn visits are to be continued, more members must be fortheoming, or the County Association will lose by the Wisbech district, from the fact of members living so far apart. A member who witnessed the quieting and handling of one of his most vicious stocks (which had hitherto been smoke proof) remarked that the method alone was worth three years' subscriptions, such treatment being rather beneficial than otherwise to the colony. It was surprising to see how bee-keeping, under skilful manipulation, is, instead of a dread to the operator, as free from pain or inconvenience as any other every-day calling, and Mr. Howard will deserve the thanks of many for having so far made a royal road to bee-keeping. Bees, like the present season, are very late.'

Correction.—P. 322. Reply to 'Aged Amateur, Treatment of Swarm,' line 12, *for* Removing *read* Reversing.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 22, 23.—Lincolnshire Agricultural Society, Lincoln. Secretary, R. R. Godfrey, Grantham.

July 28.—Surrey County Show, Leatherhead. Sec., Captain Campbell, Box Grove Road, Guildford.

July 30-August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

August 12.—Taunton Flower Show. Entries close August 9th. Hon. Secretary, E. S. Hammond, 67 High Street, Taunton.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

STAFFORDSHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

July 21-23.—Shropshire and West Midland Agricultural Show, Wolverhampton. S.C.B.K.A.'s Annual Show.

July 26, 27.—West Bromwich Floral Fête, Dartmouth Park.

August 2.—Trent Valley Horticultural Show, Chartley Castle.

August 5.—Darlaston Floral Fête.

August 9.—Gnosall Fête and Honey Show.

August 17, 18.—Bilston Flower Show.

August 19.—Brenwood Flower Show.

Business Directory.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

RICHARD BROWN'S PORTABLE APIARY,

(Registered No. 4963.)

Will be exhibited at ST. IVES FLOWER SHOW on THURSDAY the 5th of AUGUST.

CONSISTS of Four complete Bee-hives of Ten Bars each, Association size, arranged with Double Walls outside, which will retain the heat and add to the comfort and health of the Bees through the winter.

Mr. Joseph Parren, Builder, of Earith, is the maker of the Apiary, and will take Orders for it.

RICHARD BROWN, Earith, Huntingdonshire. (153)

MANIPULATE WITHOUT SMOKE.

WEBSTER'S FUMIGATOR

ENTIRELY supersedes the Smoker, both in simplicity and effectiveness. No 'going out.' No tainting of honey. Always ready for use without any preparation. Can be carried in the pocket.

For Testimonials see Advertisement in Bee Journal, June 24.

With Bellows, 4s. 6d. Without Bellows, 3s.

Can be adjusted by any novice to ordinary smoker bellows.

Bottles of Agent, Carbolic Acid, Oil of Tar, and Water properly mixed, 6d. each. Postage 4½d. and 3d.

W. B. WEBSTER,

Inventor and Sole Manufacturer,

WOKINGHAM, BERKS.

LAST TESTIMONIAL.

'I have been using your Fumigator and find it grand. No more smoke for me; no more lighting and relighting; the Fumigator is always ready. Now in the busy time amongst my large quantity of stocks I would not be without it if it cost £5.—J. M.'

FIRST PRIZE, SILVER MEDAL,
Royal Counties Agricultural Show. A 894

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Established in 1861.

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BRITISH BEE-KEEPERS' PRACTICAL NOTE BOOK. By Thomas W. Cowan, F.G.S., F.R.M.S., &c. Crown 8vo, boards, 1s.; postage 1d. Indispensable for every Bee-keeper. Published by J. Huckle, Kings Langley; may also be obtained of all Hive-dealers.

Publications of the British Bee-keepers' Association:

HONEY AS FOOD. By Frank R. Cheshire, Esq., F.R.M.S. Price 3d.

ADULTERATION OF HONEY. By Otto Hehner, Esq., F.C.S., F.I.C. Price 6d.

BEE HOUSES AND HIVES. By Rev. George Raynor. Second Edition (enlarged), Price 6d.

WINTERING BEES. By Thomas W. Cowan. The most complete work on the subject of Wintering published. Price 3d.

Address J. HUCKLE, Kings Langley, Herts.

EDEY & SON'S

ARE PREPARED TO EXECUTE ORDERS PROMPTLY FOR GOODS AS UNDER:—

SECTIONS of finest quality and colour, will fold without danger of corners breaking.
$4\frac{1}{4} \times 4\frac{1}{4}$, 24*s.* per 1000, 12*s.* per 500, 3*s.* per 100. $6\frac{1}{4} \times 5\frac{1}{4}$, 30*s.* per 1000, 15*s.* per 500, 4*s.* per 100.

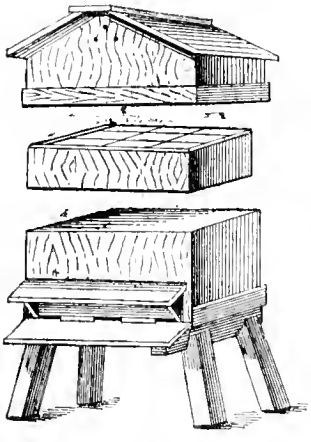
FOUNDATION. Guaranteed Pure.
STOCK—1 lb., 2*s.* 2*d.*; 5 lbs., 2*s.*; 28 lbs., 1*s.* 11*d.*; 100 lbs., 1*s.* 8*d.* SUPER—1 lb., 2*s.* 11*d.*; 3 lbs., 2*s.* 9*d.*; 10 lbs. 2*s.* 8*d.*
Pure Wax worked into Foundation at 6d. per lb.

FRAMES. No. 16. Dovetailed. For the use of Amateurs and others who make up their own Frames. Neither Frame-block nor nails are necessary. Price 12*s.* per 100; 2*s.* per doz. 2*s.* 6*d.* for 11, free by post.
No. 17. Plain Frames for Nailing. Price 7*s.* 6*d.* per 100. Ditto, ditto, complete, and fitted with Metal Ends, packed free, 3*s.* per dozen.

EDEY'S WIRED FRAMES, fitted with Foundation. No danger of sagging or breaking down. Price 6*s.* per doz.
All Frames have split tops, if so ordered, without extra charge.

EDEY'S METAL ENDS cannot be improved, and are the simplest, cheapest, and best. Per gross, 7*s.* 6*d.*; per dozen, 9*d.*; postage 3 dozen 6*d.*

CRATES of SECTIONS, specially designed to retain heat and remove easily, of 24 Sections, 4*s.*
Cheaper ditto, 3*s.* 6*d.* each; 21 Sections, 3*s.* 6*d.* and 3*s.* each; and containing 7 Sections and Quilt, 1*s.* 3*d.* each.
SKEP CRATES, with Roof, containing 15 1-lb., or 10 2-lb., 3*s.* 6*d.* each, and with Separators and Starters to Sections.



No. 7.

For General Use.

No. 7 HIVE. Containing 11 Frames, Dummy, and Crate of 21 Sections (started) and with moveable bottom on legs. Price 12*s.* 6*d.*

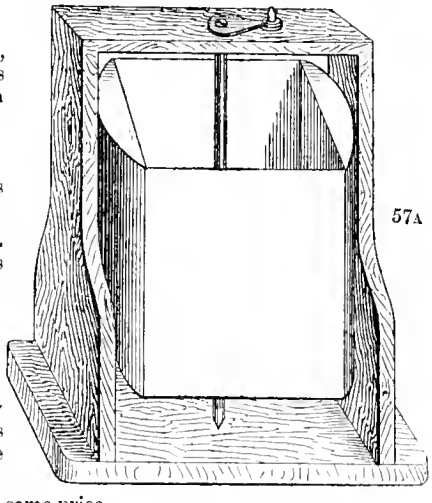
DOUBLED HIVES.

Will be found to give better results for Extracting.

No. 8, DOUBLED, is kept in stock. Price 15*s.* Each chamber contains 11 Frames and Dummy.

EDEY'S Cheap EXTRACTOR.

No. 57A. Price 17*s.* 6*d.* Is of entirely new design, and revolves two combs as usual. Honey is emptied by valve at foot; *not shown*. Order early.



57A

HONEY KNIVES.—BINGHAM, 5*s.* per pair. No. 63, same price.

GLASS JARS.—EDEY'S Patterns are well known by their elegant appearance, extra value, and low price. Price of the best and clearest White Flint Jars, 18*s.* per gross. Three patterns sent post free, 9*d.*; singly, 4½*d.* each. **Screw Mouth,** bright Nickelled Screw Cap, extra quality White Flint Jars, as engraving, 25*s.* per gross; in 5 gross lots, 23*s.* 6*d.* per gross. Cork Wads for above, 2*s.* 6*d.* per gross. Gross Crates free; less quantity, 6*d.* for package.
Also 1-lb. Jars, *not Flint*, 15*s.*; 2-lb. 19*s.* per gross.

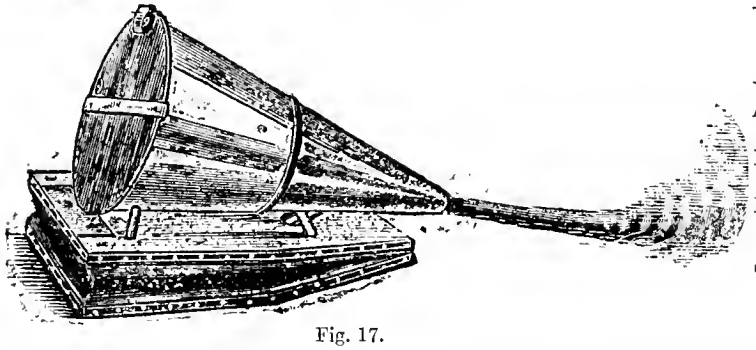


Fig. 17.

PARKER'S FOUNDATION FIXERS, 1*s.* each. **GREY'S,** to work by foot power, 2*s.* Latter recommended.

VEILS, with Wire Strip, 2*s.* each.

All kinds of **NAILS,** from 2½ in. at 2½*d.*, to 1 inch at 4½*d.* per lb.

EXCLUDER ZINC, 6*d.* per foot; in sheets, 5*d.* per foot.

EDEY'S English-made **CLARK SMOKER,** 2*s.* 9*d.* each; 15*s.* per half dozen.

TINS for Extracted Honey, 3½, 7, 10, and 14 lbs. The Set sent, post free, for 1*s.* 9*d.* Suitable for transit when filled by rail or post.

PURE LIGURIAN QUEENS, 7s. 9d. PALESTINE, 15s. SYRIAN, 20s.

Palestine have taken first rank, both as a Working and Storing Bee, when other varieties are comparatively idle. Ignorance of their merit, and prejudice, and account of their so-called indifference to smoke, is gradually but surely succumbing to their perseverance and valuable qualities. Smoke, if pungent, generally subdues them; if obdurate, carbolic is certain to. **CARNIOLANS, 8s. 6d. BLACKS, 3s. 6d.**

*** **Dealers and others are requested to notice that while strictly adhering to prompt cash, we are prepared to quote special prices for 5000 Sections, Cwts. of Foundation, and goods in similar quantities.**

STEAM JOINERY WORKS ST. NEOTS.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

[No. 214. VOL. XIV.] JULY 29, 1886. [PUBLISHED WEEKLY.]

Editorial, Notices, &c.

THE SOUTH KENSINGTON SHOW.

As we go to press the necessary preparations for this Exhibition are proceeding at a rapid rate. Only two days can be allowed to fit up the necessary staging and to stage the several exhibits for this the largest and most representative exhibition of English bee-keeping that has ever taken place within the United Kingdom.

The Exhibition will be held in the Royal Conservatory adjoining the Albert Hall at South Kensington. No more suitable building for holding such an exhibition can be found. The present exhibition differs somewhat from the previous metropolitan shows of the British Bee-keepers' Association.

In the classes for honey an endeavour is being made to demonstrate that every county within the United Kingdom is capable of producing excellent honey. Each exhibit of honey will be labelled with the name of the county from which it is produced. A copy of the catalogue has been submitted for our inspection, and we heartily congratulate the Committee on the results of their labours in endeavouring to produce a representative exhibition of our special industries.

The only cause for regret is the absence from competition of several of our best honey-producing counties, namely, Devonshire, Dorsetshire, Lincolnshire, and Hampshire; that of the last-mentioned county is accounted for by the fact of its own annual exhibition taking place at the same time at Southampton. Ireland will be represented by several exhibitors. Class I. is devoted to a county competition, open to the County Associations affiliated to the B.B.K.A. Eleven entries have been made in this class. Each entry will form a small exhibition in itself, the honey being staged to the height of seven or eight feet; one county has intimated its intention of exhibiting nearly half a ton.

In the class for thirty-six 1-lb. sections no less than forty-three entries have been made, and the class for forty-eight 1-lb. bottles of run honey has produced thirty-eight entries.

The whole of the exhibits in the honey classes are to be staged in tiers, and will be surmounted by plants of various kinds. Every effort is being made to give the exhibition a thoroughly attractive appearance and an interesting character.

In the division for appliances, the usual class for large collections has been dispensed with. The classes for hives are largely filled, numbering something like thirty entries in each class. We think this part of the schedule would have been improved and made more representative by adding a class for hives not limited to a stated price. Upwards of 250 exhibitors will contribute to the Exhibition, and more than 3000 superficial feet of staging are required for the numerous entries that have been made. The number of entries is about 340.

It was hoped that this Exhibition would have enabled the English manufacturers of appliances, and the producers of honey within the United Kingdom, to have compared results with our friends in the Colonies. We fear, however, that this expectation is doomed to disappointment. So far no progress has been made in the department allotted to Canada for a display of goods connected with bee-keeping in that colony. We think the two Exhibitions together could not have failed to be of very great interest, and attended with important results to both.

A full report of the Exhibition will appear in our next issue.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

The forthcoming Show of this Association at Southampton on Saturday and Monday next, July 31st and August 2nd, in connexion with the Royal Horticultural Society of Southampton, bids fair to be well-nigh the largest honey and hive exhibition ever yet held in Great Britain. The President, H.R.H. the Princess Beatrice, has graciously consented to open the Show, and to distribute the prizes; and this fact, coupled with the liberal allowance for prizes (nearly 50*l.*), has called forth what we believe to be about the largest number of entries on record, amounting to no less than 230. The exhibitors themselves number between fifty and sixty, and the competition in some of the classes, notably the champion classes for the British Bee-Keepers' Association medals, and the class for extracted honey, promises to be very severe.

It is unfortunate that the date of this Show

corresponds with that of the B.B.K.A. at the Colonial and Indian Exhibition, as undoubtedly the one draws away exhibits from the other, and in consequence Hampshire will be missed from the Counties Competition in London; but the net result will bo a gain to both, as in both cases vast concourses of people may be expected who will go away thoroughly impressed with the importance and utility of this modern industry. Doubtless many of our readers are asking themselves what they shall do on the August Monday holiday; to such we cannot do better than suggest a visit to the charming old town of Southampton, with its quaint 'Bar' gateway, its fine docks, its pleasant and extensive common, &c., and a visit to the beautiful Westwood Park where the Show is to be held.

A FATAL INCIDENT TO A BEE-KEEPER.

It is with very great reluctance that we direct the attention of our readers to a paragraph which has gone the round of the daily papers, to the effect that 'on Tuesday, the 20th inst., at Ludlow, Mr. John Adney, a former mayor of that place, while attending to his bees in his garden, they swarmed upon him, and stung him so severely that before medical assistance arrived he died.' Yet in our position of chroniclers of the varied phases and circumstances of bee-life, it is from a sense of duty that we feel compelled to advert to this sad event. We have endeavoured to gain further particulars of the occurrence, but our attempts have not, we regret to say, met with success. We could have wished to have known more than the few outlines we have recited, as we have frequently noticed that in instances of death said to be the result of the sting of a bee, there were various predisposing causes which were more proximately the cause of death than the one assigned. Still, with the bare statement as it appears before us, we can easily conceive of a swarm settling on or near the face: the natural desire there would be to get rid of or to escape from it, and the consequent irascibility of the disturbed bees, with the fatal result ensuing. From an old writer on bees we have a graphic account of the imminent danger arising from the settlement of a swarm on one of his domestics. It so immediately illustrates the circumstances of the case before us, that our readers will, we trust, forgive the length of the quotation:—

'In the year 1717, one of my swarms settling among the close-twisted branches of a codling-tree, and not to be got into an hive without help, my maid-servant, being in the garden, offered her assistance to hold the hive while I dislodged the bees. Having never been acquainted with bees she put a linen cloth over her head and shoulders, to guard and secure her from their swords. A few of the bees fell into the hive, some upon the ground, but the main body upon the cloth which covered her upper garments. I took the hive out of her hands, when she cried out the bees were got under the covering, crowding up towards her breast and face, which put her into a trembling posture. When I perceived the veil was of no further service she gave me leave to remove it. This done, a most affecting spectacle presented itself to the view of all the company, filling me with the deepest distress and concern, as I thought myself the unhappy instrument of drawing her into so imminent hazard of her life. Had she enraged them all resistance had been in vain, and nothing less than her life would have atoned for the offence. I spared not to urge all the arguments I could think of, and use the most affectionate entreaties, begging her with all earnestness in my power to stand her ground, and keep her present posture, in order to which I gave her encouragement to hope for a full discharge from her disagreeable companions.

'I began to search among them for the queen, now got in a great body upon her breast, about her neck, and up to her chin. I immediately seized her, taking her from among the crowd with some of the commons in company with her, and put them together into the hive. Here I watched her for some time, and as I did not observe that she came out, I conceived an expectation of seeing the whole body quickly abandon their settlement; but instead of that I soon observed them gathering closer together, without the least signal for departing. Upon this I immediately reflected that either there must be another sovereign, or that the same was returned. I directly commenced a second search, and in a short time, with a most agreeable surprise, found a second, or the same; she strove, by entering further into the crowd, to escape me, but I re-conducted her, with a great number of the populace, into the hive. And now the melancholy scene began to change to one infinitely more agreeable and pleasant.

'The bees presently missing their queen, began to dislodge, and repair to the hive, crowding into it in multitudes, and in the greatest hurry imaginable. And in the space of two or three minutes the maid had not a single bee about her, neither had she so much as one sting, a small number of which would have quickly stopped her breath.

'How inexpressible the pleasure which succeeded her past fears! I never call to mind the wonderful escape without a secret and very sensible pleasure.

'This memorable escape inspired her with great courage, consimilar to these bold, daring, and undaunted insects, that ever after she would resolutely undertake the most hazardous services about them.'*

The difference between the case above stated and that which is subject of our remarks, evidently consists in the temper of the bees. In the one case there was no displayed disposition to use their stings, in the other the bees were, from some unknown cause, excited to the extreme of irascibility. This tendency to anger is a more marked feature in foreign bees than in our native ones. We often have read of the effect of rousing the hostile feelings of Indian and Egyptian bees; and narratives of such have occasionally appeared in our columns. We need only mention one instance at present. In the account of the last journey of Mungo Park in Africa, it is stated: 'When the party had come to a place called Bee Creek, a curious accident befell them. Some of the people, being in search of honey, disturbed a large swarm of bees, which attacked the men and the beasts of the company with such violence as to send them flying in all directions for safety. The severity of the assault may be conceived from the fact that six asses and one horse were lost on the occasion—two, if not three, of the asses being literally stung to death, and the other animals having never recovered after their dispersion.'†

There is no necessity, however, for going abroad for instances of the anger of bees, they occur at our

* Thorley's *Enquiry into the Nature of Bees*, 2nd edition, p. 117.

† *The Life and Travels of Mungo Park*, p. 394.

own doors, and even in the present number (page 340), we have an example of it. But having this sad event brought thus before our eyes we fail to see in it any reason why any bee-keepers, however timid or susceptible, should forego the interest that they have hitherto felt in bees. It is an incident that may not occur again in the course of our lifetime. It is but another instance of the uncertainty that we are exposed to in life, and of the fact that Death is ever meeting with his victims at unexpected times and in unforeseen circumstances. How often does Death come even when persons are engaged in the most ordinary routine of life. James Bruce, the traveller, after encountering all the perils and hardships of his journey through Abyssinia, died through falling downstairs at his own house; William Huskisson, the eminent statesman, received fatal injuries at the opening of the Liverpool and Manchester Railway; Sir Robert Peel, Prime Minister of England, was thrown from his horse in Hyde Park, and received such severe injuries that in a few days he succumbed; and his relative, and our respected and ever-lamented chief, preaches to his village congregation a sermon on 'the uncertainty of life,' and in a few short hours furnishes them in his own person with a melancholy illustration of his theme. Death stalks in through the open door, and his arrow finds its way through the closest chinks. Our papers daily teem with reports of boating and bathing accidents; in the games of cricket and of football how frequently fatalities occur. In every turn of life we are meeting with evidences of this liability to death. We therefore see no reason why the result of the accident which happened to Mr. Adney, though sorely and bitterly to be lamented, should cause timidity in the breast of any bee-keepers, or occasion any diminution of their pleasure and interest in attending to the wants, and in studying the habits, of bees. At the same time being thus forcibly made aware of the dangerous possibilities that might result from an undue confidence, it behoves all to be duly cautious and prepared to meet every eventuality.

SOMERSET BEE-KEEPERS' ASSOCIATION AT BATH.

ROSE SHOW, JULY 8.

This Show was held in glorious weather and was very fairly patronised, but the entries for the honey prizes were few and the exhibits hardly what they ought to have been. Manipulations and lectures were given in the tent during the afternoon, the Rev. C. G. Anderson, Hon. Sec., being the principal lecturer. Messrs. W. N. Griffin, of Freshford, and S. Townsend, of Bath, were the judges of hives and honey. The following is the list of prize takers:—

Class I. Best 12 lbs. of Comb Honey (open to Bath and neighbourhood only): 1, Paul, Longwell Green; 2, Mrs. Clark, Comb Grange.—II. Best 12 lbs. of Comb Honey (open to all): 1, Rev. C. G. Anderson, Otterhampton, Bridgwater; 2, Ewin Nurse, Longwell Green.—III. Best 12 lbs. of Extracted Honey: 1, Rev. C. G. Anderson; 2, T. Hallett, Otterhampton.—IV. Best Collection of Honey in the Show: 1, Rev. C. G. Anderson; Extra Prize, West of England Honey Depôt.—V. Best Bar-frame Hive, not to exceed 10*s.* 6*d.*: 1, equal, T. F. Huish, Street, and C. E. Pyne, Yeovil; 3, A. F. Hutchings, St. Mary Cray.—VI. Best Sectional Skep-cover, not to exceed 5*s.* 6*d.*: 1, Rev. C. G. Anderson; 2, T. F. Huish.—VII. Best Section-crate for 2l, not to exceed 5*s.*: 1, Ball, Chippenham; 2, C. E. Pyne.

—CHARLES G. ANDERSON. *Hon. Sec., Otterhampton Rectory, Bridgwater.*

THE WOLVERHAMPTON SHOW.

A judge's lot is not a happy one, and I had dire forebodings when I answered a telegram from Mr. Huckle promising to go to the above show, little thinking, 'poor easy man,' what my promise entailed. We live now in too much of a hurry, and if there is one thing I detest it is those envelopes of a nondescript colour which are significant of one of the greatest plagues of the age. Being rather old-fashioned, and very deliberate in thought as well as action, telegrams trouble me more especially when a reply is paid for and the boy waiting. You must decide at once, without being able to carefully consider the matter, and perhaps sleep over it, and finally decide nothing. As I wanted to return the same day, I found that I should have to leave London by the 7.30 a.m., and that meant leaving Wimbledon by the 5.6 a.m. Then came the question, How was I to get up, or should I stay up all night? There is a baby and a kid next door (no joke intended or meant), and they are both excellent as anti-narcotics, but rather uncertain in their action, so I borrowed an alarm clock, which was carefully set for 4 a.m. I dreamt of that wretched alarm all night, and finally got up before 4 a.m., as the thought of its delightful row was too much for me.

I reached Wolverhampton before 11 a.m., and got to the show, which, though not very extensive, was good, especially in the honey classes, though the late season has affected the bee-keepers in Staffordshire more than it has those of us who live farther south.

The committee allowed an exhibitor to show more than one exhibit in the same class, and while I was puzzling over the merits of the two exhibits, which were wonderfully alike, Mr. Bailey kindly suggested that I need not bother, as they were both from the same apiary.

This is not a good plan. The object of all shows should be not to encourage one bee-keeper, but all; and I think the tendency of allowing more than one exhibit by the same bee-keeper in one class is apt to deter others from showing. I don't suppose we shall ever get to the ideal perfection of a honey handicap; it is never followed in shows of beasts, nor will it be in those of bees.

The disciples of the reversible frames would have been in their element, as there was a very ingenious hive of Mr. Rollins (expert Staffordshire B. K. A.), which could be bodily reversed. It is so difficult nowadays to get at the frozen truth. Some years ago I reversed a Pettigrew which was well stocked with bees, but they would not go into the super, though my other hives were hard at work in theirs. The great advantage of this hive is that all the combs can be reversed in a couple of minutes, without any bother, and with very little disturbance to the bees.

Three candidates were to have presented themselves for third-class examination, but only one appeared, and as he calmly put a lubberly drone in the queen-cage, and naively asked me if that was the queen (!!!), it is hardly necessary to say that he did not pass. Gravity in a judge is almost an essential, but it was very trying to preserve my centre of gravity, both literally and metaphorically.

On inquiry I found that the candidate had never before driven a skep, and had only once seen the operation, and I suppose he thought that driving bees 'comes by nature.'

My work being finished I got back to London by the 6.20 p.m. train, and got to bed about midnight, having had a short day's work of nearly twenty-one hours.—G. WALKER, *Wimbledon.*

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts* (*see 2nd page of Advertisements*)

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

IRASCIBILITY OF BEES.

[470.] Last Saturday I removed a crate of supers well filled from one of my hives, smoking the tops of the supers both before and after removal for the purpose of quieting and getting rid of the bees. My bee-stand is near the fowl-run, and a ferocious attack was made by the bees upon some imperfectly fledged chickens about two months old, and all of which were badly stung. One unfortunate bird died within a few minutes, and another escaped and disappeared not to return again, probably having also succumbed to the attack. The others are recovering. I have never known this to happen before, and I shall be glad if some of your correspondents can suggest a reason, and how I can avoid a recurrence of this little event.—J. H. B., *Ipswich, July* 13.

[A similar incident to the above happened some years ago in our own apiary, when six out of seven chickens met their fate through the stings of the bees.—ED.]

QUEEN INTRODUCTION.

[471.] Dr. Geo. Walker (page 317, No. 440) takes exception to the obvious deductions I have drawn from his letter. If I have made a mistake I deeply regret it, because I always like and aim as much as possible to be exactly correct; not that I am to blame, for this must remain with the Doctor for writing so carelessly, which, you will admit, Mr. Editor, becomes no man. It does not yet appear to me that he 'only referred generally to the plan;' had he done so, he might have alluded to it as, 'All we have to do is to let a fertile queen run in at the entrance forty-eight hours after the bees have been deprived of the means of re-queening themselves.' I did not sign 'Grinding Wheel' to hide my identity; because I knew Dr. W. would know who I was, and the *nom de plume* would be more intelligible to *him* than my own name; just as I know 'A Surreyshire Bee-keeper' his *nom de plume*.

If he and others wish really to test the system recommended by 'A. H. B. K.,' let them follow his directions fairly. This brings me to notice the preceding letter by C. N. Abbott, who has always laid down the 'law' that 'the older the bees and longer queenless, the more difficult it is to introduce a queen,' which I have duly tested, and have arrived at the conclusion that I know the reason of his forming this opinion; perhaps he would be able to explain why a stock of black bees in normal condition, with brood in all stages of development from the egg to the hatching bee, and large numbers of young bees recently hatched, killed two extra fine Syrian queens received from Beyrout, which I tried to introduce by means of the pipe-cover cage; and then, when I had destroyed every queen-cell and they had no means of re-queening themselves, they accepted joyfully another queen presented at the entrance. I have tried the cage plan every spring, for experiment, and I must say that, up to June 15th, every third one was failure.

I can't conceive why, when one is trying to test this 'law,' they should extract the honey from the cells first, or even feed them; by this the bees are put in a state of excitement, and are therefore not in a natural condition, which is the foundation of this system; hence the bees must know they are hopelessly queenless for forty-eight hours, and then a fertile queen given at the *entrance*, that is, the flight-hole, not the end of the alighting board, which may be a foot away; and if one will then put his ear close to the hive and listen he will soon hear a peculiar hum, similar to, but still distinct from, the swarming hum made by bees running into a hive. If the hive is opened the bees will be found stationary on the combs, fixed in a peculiar way, fanning their wings, which seems to me to be their language conveying the idea that a mother has come. I have introduced hundreds of queens by this system, at all times of the year, and never had one failure, and I trust others will test it besides those who have always advocated something else as being the thing.

In conclusion, I can't understand the queen of Mr. Abbott being balled over three days. Has any one else ever known a queen continuously 'balled' this length of time and still be alive? I never did, nor half of it: perhaps they were only keeping guard over her, to keep her from getting away; I have several times noticed the bees form a thick *cordon* round her, but she was always free to advance *into* the hive.—GRINDING WHEEL.

QUEEN INTRODUCTION.

[472.] As so much has been written lately about direct introduction of queens, I thought I should like to try my hand. I purchased a queen from Mr. Simmins, and swarmed the bees, leaving the old queen on the old stand and removed the stock to a new stand. In the evening I took the queen to be introduced, put her in a pipe-cover cage, and left her in a warm place for forty minutes alone and without food. I then lifted up the corner of the quilt, drew the card from underneath the cage and the queen ran down. After a lapse of sixty hours I examined the hive, and found the queen safely installed. I should like to hear of others who have been successful, as well as those who have been unsuccessful; as it strikes me, Mr. Editor, that we hear more failings than successes, as people are only too ready to run a new thing down if they fail the first time, whereas we hear nothing of their success, as they are satisfied and do not care to trouble to give their experience.—J. S. W.

EXPERIENCE IN QUEEN INTRODUCTION.

[473.] Perhaps you will allow me to relate my experience in regard to queen introduction, the discussion of which is now proceeding in your *Journal*. Like others, I have had great difficulties this summer, getting absolutely tired of the caging system—attending almost daily upon a pugnacious set of bees for a fortnight without any favourable result. I then noticed Mr. Simmins's advertisement in your *Journal*. I bought his little pamphlet, and the simple and rational way he proposes, with so much confidence, induced me to try his method. Five hives had been queenless for some weeks. Caged imported queens had flown off immediately the cage was raised, either not to be seen again, or caught with some difficulty. Inserted capped queen-cells were in all cases demolished; the bees were so furious that they could only be approached armour-clad. I procured five Italian queens from Mr. Baldwin, and introduced one to try, as Mr. Simmins advises, with perfect success, finding her laying hard next morning.

So encouraged, I subdivided a four-frame comb-box into four divisions, introduced my queens with their attendants from the Italian imported box during the

afternoon, and left them till evening, in order to allow them to regain self-possession. At half-past seven I inserted the respective frames into the middle of each hive without the inmates becoming aware of the smuggling which had been effected.

The next morning I found three queens accepted, having all laid eggs during the interval. The fourth I found balled without knowing the reason. I then proceeded as Mr. Saddler advises in your issue of July 22, with my own modification, as practised on a former successful occasion. After having rescued the poor, mauled, hungry, and exhausted queen, I fed her in a peppermint-sprinkled comb-box, then rattled the frames of the obstreperous bees, smoked and pepperminted them, and frightened them to that extent that they were all at the bottom of the hive in a pool of diluted peppermint syrup. Then I covered them, and threw my queen into the moving mass below at the back of the hive. She at once continued feeding upon the syrup, and I left her to her fate. An hour and a half later I found, on examination, that she had garnished several dozens of cells with eggs.

Therefore, as Simmins's method will no doubt answer in most cases, and is neat and easy, I have no doubt that it will be speedily adopted by apiarians. In exceptional cases the Saddler system might be practised. At any rate, I, for my part, have given up the cage, as these two manipulations suffice, economising much time and labour.—G. Mellin, *Wickham Hall, West Wickham, Kent, July 25.*

SUPERSEDING QUEENS. [466.]

[474.] It would have been much better, and far more pleasant, had Mr. Hooker replied to mine in a straightforward manner, instead of implying lack of experience upon my own part. I have kept bees for many years, and for the past six years on an extensive scale, during which time I have had no other occupation, and for many hours day after day their management has been my sole care; thus it will be believed that I have many opportunities for studying their requirements at all times, and I can assure Mr. Hooker I appreciate and heartily agree with his statement that 'an ounce of practice is worth a ton of theory.'

Mr. Hooker says, 'Many of the American bee-keepers whose written opinions he quoted have very large apiaries, keeping bees as a profitable industry, having probably twenty colonies to any one that Mr. Simmins has, and whose whole time is given up to the production of honey and the study of the best means to obtain the largest returns.' Even if true, what is to be gained by such a comparison? It does not depend upon the number of colonies a man may have as to whether his opinion is always correct: his knowledge is gained according to his powers of observation and application. But to show the folly of making such a statement as above quoted, without first ascertaining the facts of the case, I will give a few plain statements gathered from the writings of the men mentioned in Mr. Hooker's first letter.

James Heddon's attention is divided between a large manufacturing business and some 450 colonies; Charles Dadant has about the same number (my own, about half that number); Doolittle seldom has more than 80, and has another occupation; Hutchinson about 100; Prof. A. J. Cook 20, and many other duties to attend to; J. E. Pond, jun., keeps only a few for experiment, and is a lawyer with much business on his hands. I do not remember having noticed how many H. Boardman has; G. W. Demaree runs about 100 colonies. Your readers will judge for themselves as to whether the comparison was well chosen or not.

There is one thing that should not be overlooked. At the same time those replies quoted by Mr. Hooker were given, Dr. C. C. Miller, with 300 colonies, gave it as his opinion that queens should be superseded at the end of their second season; Dr. Tinker, another extensive bee-keeper, gave a similar answer, and would reserve only those queens exceptionally good, wherefrom to breed others to perpetuate their desirable qualities.

I am pleased to find that Mr. Hooker has not denied the fact that queens are in their 'prime' during their second summer; and this being so, what is to be gained by keeping them during the time they are on the decline, when others can be readily obtained to take their place? It is not enough to say that a queen continues good during her third season; a younger one and better should be in her place, or the highest results will not be obtained at all times. Mr. Hooker apparently prefers queens raised under the swarming impulse, I suppose because they are started from the egg, and brought into existence when the hive is crowded with bees most suitable to act as nurses. This is quite at variance with his theory that the bees know best when their queen is worn out, and then would allow them to raise others from the first material which comes to hand, be it old or young larvæ, and more often than not during a time when the weather is far from genial, and the hive has the least number of bees capable of giving them the necessary food.

Mr. Hooker concludes, 'With young queens which should in every well-ordered apiary be kept in reserve, the delay caused by superseding will be very small, and the *economy* very great.' Now, as it is such an easy matter to keep young queens on hand, why allow a colony to find out their own reduced condition, and raise a young queen from a *worn-out* mother? Reader, is this progress? and is it possible that any advanced bee-keeper can fail to see that the plan is following out anything but a course of true economy? Moreover, how is the above quotation to be reconciled with the words by the same correspondent, to be found on p. 281, 'My experience tells me that there are many things that bees do much better than we can, and I think this, the superseding of worn-out queens, is one that if left to themselves they will do at the right time.' If the bees are to be allowed to raise a young queen just when they think they want one, why does Mr. Hooker trouble to raise them for the same purpose?

It will be noticed that Mr. Hooker *thinks* the bees know best when to supersede their worn-out queen; he does not say he has found it so in practice. For my own part I cannot afford to simply think bees know better than myself, as practical experience has shown me the loss sustained by such a course.

In conclusion, I would ask Mr. Hooker to kindly refer to my last, where he will find that I did not say he had an objection to keep young queens, but that he objected to the editor's advice, 'Keep *only* young queens.'—S. Simmins.

LAW ON BEES.

[475.] Query.—A man whom we will call A keeps bees in a garden, one side of which is alongside of a village road. Another man has a house and garden on the other side of the road. We will call him B. Well, A's bees are on two or three occasions very savage, and sting people going along the road, and people and animals in B's garden. Has B any legal remedy against A?—M.

[As the law on bees is not precise, the case presented can only be dealt with on general principles, and as compared with decisions that have been made on questions of a similar nature. Underhill on Torts says: 'Any act or omission of a person whereby sensible injury is caused to the property of another, or whereby the ordinary physical comfort of human existence in such property is materially interfered with, is actionable.' We feel inclined, therefore, to say that B has a legal remedy against A; but without regard to the

legal side of the question, if A's bees are a nuisance and a trouble to his neighbour B, it would only be an act of courtesy for him to remove them to some locality where the nuisance would cease. If our correspondent desires to further study the question, 'Are Bees a nuisance?' we would refer him to a letter on the subject on p. 269, Vol. XIII.]

METAL FRAME-ENDS.

[476.] In the year 1881 a hive, having frames with metal ends, was exhibited at South Kensington by Messrs. Green and Sons, of Rainham, in Kent, for which they obtained the bronze medal of the B.B.K.A. In the following year, 1882, Mr. Lyon exhibited a modification of Messrs. Green's metal ends at South Kensington, which he called Dr. Pine's removeable frame ends, and obtained the bronze medal of the B.B.K.A. for it. Messrs. Green and Sons are therefore entitled to claim priority for the invention of metal frame-ends.—JOHN M. HOOKER.

A VOICE FROM THE WEST.

[477.] I read the account of the Royal visit to the bee department at 'the Royal' with much pleasure. Doubtless many of the good men and true who took an active part in the reception of the Royal visitors must have often thought regretfully of their old friend and leader, and must have thought how true it is that 'one soweth and another reapeth.' Still we bee-keepers have much to be thankful for. His mantle has fallen upon worthy shoulders, and with it perhaps a double portion of his spirit. It was pleasant to read of the Prince and Princess being received by such well-known and deservedly respected names in the bee world as Cowan, Raynor, Jenyns, Seager, Hooker, and others; and pleasant and profitable too must it have been to the Royal party, especially to the younger members, to have as their conductor a gentleman of Mr. Cowan's undoubted ability and genial, courteous bearing. That the interest of the illustrious visitors should have been aroused in what was possibly to them an altogether new subject, and that their goodwill will create an interest in bee-keeping in fresh quarters, and will certainly be beneficial to it, goes without saying.

But where was Dr. Bartrum? Surely the Church should be well to the fore on such an occasion, and who so worthy to represent it as the learned and enthusiastic Doctor? But probably he is climbing some hitherto untrodden Alpine height, or enjoying his *otium cum dignitate* in some lovely and secluded spot in a far countrie. Nevertheless, we missed his name.

Ah! now again, after an absence of some years, is seen the familiar signature of our old editor. Years have passed and change is seen on every hand—change which is progress fortunately—but one thing has not changed, and that is, the good old truculent style of 'C. N. A.' He hits as hard as aforetime, is as dogmatic as ever, his blade is as keen, and his inconsistencies as amusing as ever. It is delightful to notice how our burly ex-editor, while indignantly blaming others for misquoting him, is himself in the very next issue brought to book for the same fault. Says Mr. Abbott, 'I hope I may be allowed to say how much more pleasant it would be if "S. L. B." had quoted me correctly.' Says Mr. Rudge, 'I found that Mr. Abbott not only did not quote me correctly, but misconstrued what he did give,' and so on. Again it vexes the soul of Mr. Abbott that some of your correspondents 'cannot write without imputing motives; such persons had better be left severely alone.' Sound advice certainly, which, however, loses to some extent its force by its being forgotten immediately by the giver, who at once 'goes for' his apiarian opponent in his best style. He is described as a 'blatant quibbler,' 'one whose big "I" is egregiously italicised,' and much more of the same sort of highly combustible language. Well, I will reserve my opinion as to the points of the controversy, and will be content with reminding both parties that perhaps there is no infallible method or system, whether in conjunction with a eage called after any one's name or not. Circumstances constantly vary, and, after all, there is more, perhaps, than is imagined in that once favourite and familiar, but now disused formula, *Experientia docet.*

I was amused at an episode in bee-keeping I witnessed the other day. A neighbour had invited some friends to see a little practical bee-manipulation. He had three skeps, and also three brand new patent bar-framed hives, adapted for every conceivable method of bee-keeping—supered above, below, on each side, everywhere, with every imaginable improvement,—a thing, in short, fearfully and wonderfully made. One of the skeps was then and there to be driven and transferred into the new wooden hive, and the outside combs, full of honey, were to be taken from the other two. The operator was another neighbour great in bee-keeping—an authority looked up to on all sides—but whose bees by the rarest chance survive a winter.

We will call him Captain Smith. As the bee-fever is raging severely in this neighbourhood, to the great profit of the appliance vendors, most of the invitations were accepted, and a goodly party of ladies and gentlemen assembled at the Hall at the time appointed. The party proceeded to the kitchen garden headed by the squire, and all were armed *cap-à-pie* with veils, gloves, trousers tucked into socks, &c., and very eager to behold the daring performance and to hear the accompanying lecture. The captain was in high form, and proceeded the party with a carving knife (to cut out the combs) in one hand, and a smoker in the other. Within a few paces of the hive a halt was called. A bottle of Dr. Pine's lotion was uncorked in case of need, and placed where it could be at once seized and applied. The question was then asked if all were ready. A chorus of muffled voices replied they were. One discordant note alone was heard. It was from a gentleman with a cold, who wished to blow his nose, but couldn't on account of the veil. That difficulty overcome, and all being ready, the captain exclaimed, 'Draw a little nearer, please, that you may see how it is done.' Under cover of heavy volleys from his smoker the gallant captain gallantly but cautiously advanced, and inserting its nozzle into the entrance of the first skep, bombarded it for perhaps three to five minutes. So with the next, and the next.

'Now,' he exclaimed, 'we will allow them time to gorge. The gorging is most important. All depends upon the thoroughness of the gorge. It pays to let them do it well.'

But as even bees cannot gorge for ever, the knife was at last produced and preparations made for forcing up the skep. Again from the smoke was heard the voice of the captain, 'Look out! When I turn up the hive there will be a rush of bees into the air, but don't be alarmed.' This information was not relished, still we strung up our nerves to the required pitch, and prepared to either stand or scuttle, as circumstances dictated. In a moment the hive was lifted, and found *empty* of everything but comb! So was the second! So was the third, except that there were some dead bees! Tableau!!

The gardener was cross-examined. 'He thought the bees was all right. He had noticed a sight of bees about there a week or two ago.' He had, no doubt.—JOHN PEEL.

BEES FIGHTING.

[478]. I should be obliged if you could spare space in your valuable *Journal* to place a query before your readers, which may, perhaps, be of interest more or less

to many. Namely, on the 29th of June, my neighbour (who is a member of the Kent B.K.A., and a subscriber to your *Journal*) examined his bees and found that the combs wanted emptying to give the bees room to work. No. 1 hive is a long one, with the frames parallel with the entrance, with ten frames to form the brood nest, then excluder zinc—four or five combs were taken from this. No. 2 hive is an early swarm; the frames run crossways with the entrance, and no zinc used—two frames were taken from this. No. 3 hive is an old stock, and frames run parallel with the entrance, and the excluder zinc used as No. 1 hive: three frames were taken from this and all put into a comb-box and emptied in extractor, and combs returned as follows:—No. 1 hive had four combs returned behind excluder zinc; No. 2 hive had one frame of foundation and one empty comb returned; No. 3 hive had three frames of foundation returned, and the remainder of empty combs were given to a recent strong swarm, which had been put into a hive about seven or nine days (we will call this hive 4). Now, the query is as follows—the next morning the bees in all four hives appeared to be very busy going in and out in the usual way, and showed no signs of discontent, but in the evening No. 1 hive had about a quart of dead worker bees lying in front of it. The bees, still bringing out dead and dying, some of them dropped them just off the flight-board, while others flew away with some. There appeared to be no fighting going on at the entrance, but of course there had been some inside, and perhaps was still going on inside. It was very windy and cold at the time, so it was decided not to open the hive to see. Nos. 2, 3, and 4 hives showed no signs of anything wrong that day, but the next evening No. 2 hive had gone through the same process as No. 1 hive, but it appeared to be discontinued; then Nos. 3 and 4 have gone on very well from the first, and still continue; also Nos. 1 and 2 since the first and second days after taking the honey from them. Now, in uncapping and extracting the honey these combs were mixed, so that we don't think that either of the hives got the same combs returned to them again as they had before. Now, can this be the cause of the fighting, as we cannot think that there had been any robbing carried on? I may also say that no smoke was used at the entrance, but some was used on top of the frames to keep the bees below; and we should be very pleased if any one of your readers can give the cause of the trouble.—A Kentish Bee-Keeper.

BUMPING.

The 'Drop' System *v.* Driving or Bumping for late summer work.

[479.] In the article on bumping in a late issue, there are only two methods spoken of for ridding a skep of its bees in autumn; those who have that work to perform shortly should try the plan practised in France, which consists in attaching the hive to a rope made fast to a beam or to the strong branch of a tree (where neither are present, tip and prop the cart you are using for the bees so as to have the shafts well up, and tie at the top of one of these, or use a tall tripod of light deal sticks, any similar suitable make-shift will do), the hive is attached by the top if convenient, or to a strong twine, that has been crossed under, and should hang two or three feet from the ground; a sheet is spread under to receive the bees, over which an empty skep or other receptacle is placed as soon as they are down on the sheet. For dislodging the bees the hive is lifted up a short distance and allowed to drop two or three times, when the whole of the bees will be precipitated down on the cloth below. The amount of 'drop,' which may be more for a light hive than for a heavy one, will soon be learned with practice.

Some bee-keepers first spray the lower part of the combs with syrup from a watering-can, which causes the bees to descend and gorge themselves ready for the 'drop.' Spraying the combs is recommendable when two or more small lots are to be joined in one on the sheet. As a novelty, try the three methods side by side at a show.—Peter Bois, *Jersey*.

POINTS OF COMB-HONEY.—HOME-MADE APPLIANCES.

[480.] Will some one who has judged honey, etc., at shows, inform me of the special points besides general appearance to be taken into consideration when judging honey-comb? Also when there is a class for 'bee appliances' at small shows, when it is expected that cottagers will exhibit, should not preference be given to home-made appliances rather than to bought goods, however much tidier these latter may be?—B. W. P.

[1. We cannot afford space to give the scale of points for judging comb-honey, if it were desirable. Besides, 'doctors differ' on the value of points. Attention should be paid chiefly to quality, transparency, weight, flavour, evenness of work in each section, uniformity of whole exhibit and style (or 'get-up') *i.e.*, cleanliness by scraping, freedom from propolis, dirt, &c. 2. As regards encouraging cottagers to make their own appliances opinions differ here again. The dealers now supply them so reasonably and good that there is nothing to be gained in most cases by the home-made article. So much also does success depend upon exactitude and interchangeableness of various parts, as in doubling-hives, section-cases, &c., that we are advocates for depôts in all towns where the perfect article may be purchased at a moderate price. In judging the prizes must go to the best.—Ed.]

ADVENTURES OF A SWARM.

[481.] On the 18th inst., at mid-day, a swarm of bees left the premises of Mr. Charman of this village, and was followed by his son, W. Charman, and another bee-fancier named Trussler, for about three-quarters of a mile, into one of my meadows. There Trussler seized the queen in mid-air, with his naked hand, immediately pinning her to a stout twig, and running into the thick of the insects, deposited the twig in a thick hedge; the bees immediately swarmed around the queen and were shortly after deposited in a skep. About an hour after the skep was attacked by some red-backed shrikes, and the bees driven about and several killed by them. A gun being obtained one of the birds was shot and opened, when several legs of bees were found. After the birds disappeared the bees returned to the imprisoned queen, and Mr. Charman has since safely removed them to his residence.—Edward Leigh, *Cranleigh, Surrey*.

PRIVET HEDGE.

[482.] In your reply to 'A-b-m-n,' p. 311, you recommend a privet hedge. Privet honey, although abundant, is bad. It has the faint, unpleasant smell of the flower. Kennington Park is surrounded by a privet hedge nearly a mile long, which is fortunately clipped every year: two or three years ago, however, it was not clipped, but allowed to bloom, and the few sections I can obtain here from the limes were rendered uneatable by the nasty flavour of privet. The honey is as clear and almost as thin as water, when gathered. To any one thinking of planting a privet hedge, I would say, Prevent it blooming by clipping it.—F. Lyon.

BEE-STINGS.

[483.] Surely the remedies which Mr. Crawley refers to *have* been mentioned in *B. B. Journal*, if only 'seldom.' For my part I have no faith in them or any others, the virus is so rapidly absorbed, and some subjects are so

susceptible. Has Mr. Crawley ever heard of the remedy suggested in this old stanza?

'To heal the smart a bee had made
Upon my Chloe's face,
Honey upon her cheek she laid,
And bade me kiss the place.'

C. R. S.

FLOWERS FOR BEES, &c.

[484.] Being a gardener, I have this year taken notice of the kinds of flowers and plants I have seen the bees gathering from, and nothing has been visited by them as much as the raspberry when in flower; the canes are crowded by them from morn till night.

Honey.—During the late fine weather the bees have been working well. On Wednesday, the 7th inst., I took off a super that weighed nearly 20 lbs., which the bees gathered in about a fortnight, but there does not appear to be much sale for it in this neighbourhood. I travelled a small town nearly all over to sell about half a score of pounds. Any advice where and how to sell the honey at best advantage would be thankfully received.

Honey Prizes at Exhibitions.—At the Cornwall Annual Exhibition held at St. Austle, I see by the report that exhibitors were allowed to take first and second prizes. Now, I consider that to be most decidedly wrong; no one should be allowed to take more than one prize in the same class, for if the person taking the first prize stages two lots, he is almost sure to carry off both prizes, so that does not give any other exhibitor a chance to take a second prize. Will others kindly tell us what they think about it?—J. L., *North Cornwall.*

[See Mr. Walker's letter on Wolverhampton Show, p. 339.—Ed.]

FLYCATCHER AND BEES.

[485.] Sitting in my garden the other day, within ten yards or so of my seven hives of bees, about midday, I saw what at first appeared to be a sparrow fly straight through the thickest of them. The day was hot and they were out in earnest. I took no notice of the bird alluded to until it came back over the hives, about a foot above them, and settled in a tree close by. In a minute or two he made another flight directly in the same direction. I saw this time it was smaller than a sparrow, and thought surely it was Mr. Tomtit or some of his relatives come to pay me a visit: but as he returned and settled in the tree under which I sat, I got a good view of him and found that it was neither a sparrow nor tomtit, but a flycatcher, and was feeding its young in the tree above my head. He took yet another flight in the direction above alluded to, and on returning back to its young I thought he had something in his mouth which looked uncommonly like a bee. I may say he was very bold, caring little for my presence so that I nearly got hold of him with my hand. What I want to know is this. Is this bird a *bee-catcher*, as well as a *fly-catcher?* Can any one throw any light on his strange conduct, for although I would be the very last to lay anything to his charge he is not guilty of, yet I must confess he has sunk several degrees in my estimation since that day?—J. W. Blankley, *Denton.*

CARBOLIC ACID.

[486.] I wish to give my first experience in using the above for removing sections. My master, wanting some honey taken, I procured a piece of unbleached calico, the size of section crate, saturating the same with a solution of Calvert's No. 5 carbolic acid, 1 oz., to a pint of hot water, wringing it as dry as I could, and spreading it on top of sections. After a few minutes nearly all the bees were gone down into crate below (I have two on), I lifted the crate off, carried it to a quiet shady corner of garden, and took out all the sections sealed over, putting in empty ones and returning it to hive, with only one trifling sting on my thumb, and no blisters.—Young Beginner.

A WORKROOM INVADED BY A SWARM OF BEES.

[487.] Last Wednesday, July 21, a swarm of bees took possession of the Dressmaking Establishment of Mrs. Walters, Wincheap Street, Canterbury. The workroom window was wide open and the young ladies were busy at their work, when, all of a sudden, a loud buzzing was heard, followed by a swarm of bees alighting on the table, which was literally covered with them. Great was the commotion following on their intrusion, and a hasty stampede into the hall, with the locking of the door, was the result. For one hour the bees held possession of the workroom. A consultation was held as to the best way of getting rid of the intruders, and the servant (well muffled up and protected) was sent into the garden with a tea-tray, which was well beaten, and the bees all left the workroom and settled on an apple-tree under which she stood. Thus ended a most lively scene; no one being stung. The bees were ultimately lost, there being no one to take them.—J. W.

QUEEN TRANSMISSION.

[488.] On Friday, July 23rd, I received a Cyprian queen from Mrs. Frank Benton, with the following note:—

'Dear Sir,—This morning I received two queens from Mr. Benton which were mailed June 30 *viâ* London, they were twenty-one days *en route*, and not a dead bee; they are in such good condition that I re-turn the cover and send them back to England without giving more food or letting them fly. Please let me know how you receive yours. I think this is a good test for our method of sending. Bees and queens are bright, as if just taken from the hives. Mr. B. has not reached us yet. I am very anxious about him.

'Mrs. Benton.'

All I need add is, that when I opened them on Saturday, the 24th, the bees and queen were in splendid condition, and food enough for at least five or six days more.

I send this thinking some of our friends may like to know. I shall be in London during the Exhibition, and will bring the box with me.—H. M. Appleton, *Sneyd Park, Bristol.*

REMOVING HIVES TO THE HEATHER.

[489.] Seeing this question asked in last week's *Journal*, I beg to give you my way of doing it. I have taken my bees to the heather for about thirty miles in a spring cart for many years, and am glad to say never had any misfortune with them. I work all with the Stewarton hives. First thing I do is to cover the top of the hive with perforated zinc, then draw the two centre and the two side slides; this gives plenty of ventilation, if too much, put in a slide or two. I have two iron rods about quarter inch thick, these I put up through the floor-board, one on each side of the hive. I have a cross-bar of iron, about one-eighth inch thick and one inch broad, this I put on the top of the hives, the iron rod going up through this cross-bar is firmly screwed down with thumb-screws on the ends of the rods. In this way the hive is screwed firmly to the floor-boards, so that, although upset or roughly handled, it will not move the least. I then put the hive into the spring cart and put a large screw nail in each side of the hive through the floor-board into the bottom of the cart, this holds the hive firmly to the bottom and prevents the hive from being shaken with the motion of the cart. Three years ago a neighbour bee-keeper who accompanies me to the heather with his bees had the misfortune to upset his cart going through the moor, when only one hive out of five got damaged; by not being protected with the iron rods the hive shifted

on the floor-boards. All the others kept firm to the bottom until we got the horse out and the cart put right again. Had they not been screwed to the bottom they would have been all thrown out and lost.—AYRSHIRE.

Selected Query.

[490.] *What are best kinds of comb foundation:—*
(*A.*) *For brood chamber:* (1) *Flat based or natural based,* (2) (*a*) *Wired-foundation, with distance and size and quality of wires,* (*b*) *Wired-frames, with plain foundation pressed on the wires, distance, &c.,* (3) *How many cells to square inch,* (4) *Method of insertion,* (5) *How many square feet to the pound,* (6) *The best American or English foundation machine and makers,* (7) *Deep or shallow walls to cell,* (8) *Frames filled or partly filled.*
(*B.*) *For section boxes:* (1) *How many square feet to the pound, what is the lightest (thinnest) yet produced,* (2) *Long-celled or merely the septum,* (3) *Method of fixing,* (4) *Sections filled or partly filled,* (5) *Flat based or otherwise.*

A. (1) Natural based. (2) Have never found the necessity for wires. (3) Twenty-five. (4) Lay the sheet of foundation on a flat surface, and rub down the cell walls to the width of ¼ inch from one edge with a wetted knife-handle. This will allow the sheet to enter the saw cut without difficulty. Insert it, and fix by two fine screws through the top bar. Fill up the top of the saw-cut with putty. (7) Shallow walls. (8 Partly filled. I generally cut the sheets thus— offering points for clustering, and find the spaces are regularly filled.

B. (1) The lightest procurable. (2) The septum only. (3) By pressing the edge strongly into the wood either by a wet knife-handle or Abbott's roller. (4) The smallest starters, of triangular shape. (5) Flat-based.—F. LYON.

Pelham; I would not use any other.

A. (1) Natural. (2 *a*) Wires unnecessary; (*b*) ditto. (3) As generally stated, twenty-five. (4) Melted wax both sides of edge, touching top bar. (5) Seven. (6) Pelham mill (American); the foundation can be obtained through any dealer. (7) Medium. (8) Filled for increase. Starters only for super honey.

B. (1) Not more than eight. (1 *a*) Van Deusen, but the lightest is not the most economical. (2) Long-celled. (3) Press between slit top-bars, and wax down both sides to keep sheet perpendicular. (4) Completely filled. (5) Natural; the bees always change their flat based to the natural form.—S. SIMMINS.

A. *Brood Chamber.*—1. Flat-bottomed, which the bees draw out as quickly as natural-based, and the combs are built more evenly, *i.e.*, of a more uniform thickness. 2. (*a*) I prefer wired-foundation, and always use the Van Deusen, flat-based, in which the finest tinned wire is imbedded, the wires ranging at a distance of two inches from each other. Upon this the bees build straight combs, and the queen deposits eggs in all cells alike, not omitting those through which the wires pass, and falling, or sagging, is impossible. (*b*) I have never tried the wired frames, being well satisfied with the wired foundation. 3. Full five cells to the inch, *i.e.*, twenty-five cells in the square inch. 4. My foundation is inserted in a saw-cut in the top bar of the frames. The slit is opened by inverting the frame upon brads, driven into a bench, and slipping in the foundation, which is tightly held in its place when the frame is removed. 5. About eight square feet to the pound is sufficiently heavy and thick. In the thicker foundations the septum, or midrib, is left in the centre of the comb undrawn out, especially when honey comes in fast; and the combs are more liable to fall in a hot season. 6. The 'Van Deusen,' 'Vandervort,' and 'Given' machines, all American, are among the best. 7. I prefer the cells with shallow walls, and think the bees form their combs as quickly upon it as upon the deep walled. 8. Frames should be filled, within ¼ inch all round, otherwise, too much drone-comb will be built.

B. *Section Boxes.*—1. I always use the lightest and thinnest that can be procured, and have not found any better than the Van Deusen flat-based, which leaves no mid-rib, or 'fish-bone' in the centre of the sections. This foundation runs about eleven square feet to the pound. 2. Merely the septum, as above described. 3. By a 'Parker's Foundation-fixer,' which can be worked more rapidly than any fixer with which I am acquainted. 4. About two-thirds filled, by a triangular piece of foundation, covering the whole width of the section, at the top, and sloping down nearly to the bottom. 5. Flat-based Van Deusen.—G. RAYNOR.

A. (1) I consider natural based foundation the better of the two kinds. (2) (*a*) Van Deusen is the only wired foundation I now use. It is flat-bottomed, and the wires, which are very fine, are imbedded in the foundation about two inches apart. (*b*) Wired frames with plain foundation pressed on them have not proved as satisfactory as the Van Deusen foundation. (3) Twenty-five. (4) I open the saw-cut by inserting a small screwdriver and turning it at right angles. Having cut off the corners of the sheet and a piece out of the middle of the top to give room for screwdriver, the sheet is easily lifted up through the opening in the frame level with the top. While held in that position, the screwdriver is withdrawn and the foundation is held secure. A wire nail driven through the frame from side to side and turned will render the falling out of the foundation impossible. (5) Van Deusen is about eight sheets (5½ feet) to the pound. Pelham: the only other kind I use is twelve sheets or eight feet to the pound. This I consider too light, except for wired frames, and should prefer not more than about eight sheets to the pound. (6) Pelham. (7) The Pelham machine gives a very thin septum, and with eight sheets to the pound, the walls would be sufficiently deep. (8) Sheets of foundation should be 13 × 7⅞, so that after being fixed in the frame they will hang ⅛ in. from the sides and ⅜ in. from the bottom bar.

B. (1) About ten feet. (2) I should prefer the septum very thin, with slight walls to give strength in case full sheets are used. (3) I use the 'Parker' fixer, which fixes the foundation securely and expeditiously; but for neat fixing I like the 'Abbott.' (4) I use simply starters, but see no objection to full sheets of pure thin foundation. (5) Natural based.—C. N. WHITE.

QUERIES BY A BEGINNER.

How should my hives be made, of straw or wood?
If made of both combined will they be good?

Which way should they be placed, to east or west?
Or turned to south or north? which aspect's best?

If wooden hives are used, what frames within?
Broad-shouldered ones, or with ends made of tin,

Or solid metal ends? if *this* is right,
What end that slips on well will hold on tight?

If metal ends, why then, I want to know,
Should they reverse or not? *this* please to show.

Need I have ends at all? if not, pray how
Are the small inmates kept safely below?

What kind of quilt to use, smooth shining cloth?
Or unbleached calico, neither, or both?

How shall I feed my bees with liquid food,
Or give them candied stuff solid but good?

What should the feeder be, wood, glass, or tin?
Should it be on the top, under or in?

What kind of bees are best? Ligurians,
Cyprians, English, or Carniolans?

Are the first good at work, the second wild,
The third but moderate, the last ones mild?

If bees have foul brood what's to be done?
If a bee makes for me ought I to run?

If a bee stings me, then what's the best balm,
Onion, or blue bag? would spirits do harm?

There, Mr. Editor, am I a bore?
Answer these questions, I've quantities more.

ROBERT S. ROUTH.

Answer.

Be *Modern Bee-keeping* your *guide*
And all your wants will be supplied.

HUM, SWEET HUM.

Tho' soft strains of music from palace may come,
Be it ever so charming, there's no sound like 'hum.'
The bees are so busy this bright, sunny day,
There's joy in the air—so happy are they.
Hum, hum, sweet, sweet hum,
In all the bright spring-time there's no sound like 'hum.'

When prisoned at home during winter's long reign,
How joyous to bask in the sunshine again!
The bird's singing gaily, the frog's cheery call—
Give me them—and the 'bee-note' sweeter than all.
Hum, hum, sweet, sweet hum,
The 'bee-man' can never dispense with their hum.

To me there is nothing so sweet to the ear,
As the music that comes from the apiary near.
No allurements abroad can entice me away
From the spot where the bees, tho' at work, seem to say,
'Hum, hum, sweet, sweet hum,
No labour is irksome to us when we hum.'

Toil on, little workers—evangels are ye
Of the sweets in this world to be garnered by me—
The sweets that from cheerful activity come;
Then cease not to labour, continue to hum.
Hum, hum, sweet, sweet hum,
There's no earthly music like *industry's* hum.

EUGENE SECOR.

Forest City, Iowa, April 20, 1886.

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[435.] *Paraffin Smell.* (Honeysuckle.)—Scrub the hive out thoroughly and expose to the air for two or three days; if smell is very perceptible it would be risky.—W. B. WEBSTER.

[435.] *Paraffin Smell.*—(Honeysuckle.)—This query is somewhat vague, but I conclude it is the interior of hive that is affected by the smell; and if very much so, it would not be advisable to use it for bees until the smell had entirely gone.—G. H. G.

[436.] *Camphor.*—(G. B.)—This would be a tedious job; and how would you scent the bees with camphor, it being nearly insoluble in water? Far better use a little peppermint in the mixture you intend spraying the bees with.—G. H. G.

[436.] *Camphor.* (G. B.)—Uniting can be done without scenting, if both lots of bees are thoroughly disorganised; such, for instance, as driving, or brushing off the combs of both lots and then throwing them together. Camphor is not a proper thing to scent the bees with; you want an essential oil that will mix with the syrup in order to spray the bees with the same, they will then get thoroughly scented.—W. B. WEBSTER.

[437.] *Driving Bees.* (E. Sag.)—In order to keep the hive upright, the water being used as a counterpoise weight to prevent bucket tipping over. If hive is perfectly flat at the top you do not need a bucket, but take care when the bees 'go up' or their weight in the upper hive will topple the lot over, and then look out.—W. B. WEBSTER.

[437.] *Driving Bees.*—(E. Sag.)—I have never seen bees driven over a bucket of water, and for what reason I cannot tell; but an empty bucket is often used for supporting the skep in from which the bees are being driven.—G. H. G.

[456.] *Ligurianising.*—This is a matter of opinion with yourself. You could raise queens from the Italian stock, and introduce them to other stocks. Say these were impurely fertilised, still their drone progeny would be pure; you could then next season again raise queens from the pure Italian stock and fertilise by the Kohler process described by 'Useful Hints,' page 233, of this *Journal*. If you object to in-and-in breeding, Ligurianise two of your stocks and use one for drone and the other for queen-raising. As regards hybrids being vicious. I have not, as a rule, found the first cross with an Italian mother to be so, and they certainly have not that objectionable habit of following me for one or two hundred yards, so characteristic of the common bee; but I think I should (on the score of peace) prefer the common bee, pure and simple, to the progeny of a black queen fertilised by an Italian drone.—A. T. WILMOT.

[456.] *Ligurianising.* (Honeysuckle.)—If you have one pure hive of Ligurians and a hundred other stocks, the Ligurians will remain pure as long as you keep the old queen. The other stocks would become hybrids as they swarmed and the young queens mated.—H. JEANES.

[456.] *Ligurianising.* (Honeysuckle.)—The game is worth the candle, as by introducing fresh blood of good quality to your stocks the value of them, as honey gatherers, will be enhanced; such hybrids, especially first crosses, are excellent workers. Your stocks would gradually revert back to the black; but it is now a very slow process, there being so many Ligurians in the country; such a thing as a pure black stock is now a *rara avis*.—W. B. WEBSTER.

[457.] *Final Honey Harvest.* (Honeysuckle.)—This entirely depends upon the description of flowers growing in your district and their time of flowering; no absolute rule can be laid down to suit all alike. Use your own judgment. I am decidedly against extracting all the stores and feeding up with syrup; the honey gathered late in the season is usually dark, and is not worth the trouble of extracting and feeding.—W. B. WEBSTER.

[458.] *Queen Raising.* (Student.)—1. There is no absolute rule; usually after impregnation. A case came before me yesterday where a hive had six mother cells, although not one of these had sent forth its occupant; the workers had torn open—at the side—five to-day, and the mother in the remaining one is now—this evening—just on the point of emerging. 2. Not by encasement; I have seen the mothers engaged in duels, but have never seen the workers kill them when reared in the same hive. 3. No; according to my experience, mothers, when starved out, will endeavour to enter strange hives, but always in such cases have I seen them turned out, or, rather, prevented by the workers from entering.—W. B. WEBSTER.

[458.] *Queen-raising.*—3. Yes: where a cast issues this is always the case, see reply to 'Query' 178, 'W. G. E.,' page 130. I have heard of as many as twenty to thirty queens going out with a cast. I do not know whether the princesses are *expelled*, possibly they *resign*. 2. The rivals are supposed to be killed by a series of duels *à outrance*, between themselves. 1. No. 3 partly answers this question. The first hatched queen immediately proceeds to make a hole in the sides of the other queen-cells for the bees to tear them down; but of course either this cannot be taken as a general rule, or the bees themselves must prevent her from doing so, possibly two or three hatching at the same time divert their attention from the other cells.—A. T. WILMOT.

Queries.

Queries and Answers are inserted free of charge to Correspondents When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[490.] *Carbolic Acid Fumigation.*—In driving bees from straw skeps, would carbolic acid fumigation have the same effect as smoke?—WEST CORNWALL.

[491.] *Uniting.*—Supposing I wished to join three or four driven stocks together on the spot, so as to bring them home in one skep, how should I proceed?—WEST CORNWALL.

[492.] *Four Colonies out of Two.*—Which is the best way to make four colonies out of two, the latter on ten frames each, drones plentiful, one hive to supply queen cells for both new colonies? Kindly give reasons.—HONEYSUCKLE.

[493.] *Waste Wax.*—When bees cut comb away do they utilise the wax for rebuilding or otherwise?—HONEYSUCKLE.

[494.] *Comb from Syrup.*—Does it, under any circumstances, pay to feed syrup to produce comb in a frame-hive?—HONEYSUCKLE.

[495.] *Scent of Almonds.*—I should be glad if any reader of the *B. B. J.* could tell me what causes a scent like that of almonds to issue from some of my hives.—C. H. B.

[496.] *Reducing Thickness of Combs.*—Is it advisable in extracting and preparing for winter to pare off the extra thickness of the upper part of the combs, as I find in my hives the combs are nearly built out to touch each other?—F. F. Gladwyn.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

W. Badcock.—1. At former exhibitions the officials have always admitted to conferences such of the visitors as were interested in the questions under consideration. 2. The visitors will undoubtedly have an opportunity of examining the hives. 3. The dead bees would not indicate a struggle such as you imagine. 4. There is no reason which appears for supposing that the new queens will be other than prolific.—F. C.

A. T. W.—It is a case of ordinary foul brood, *Bacillus alvei*. —F. C.

Novice, R.—1. *Using Comb containing Chilled Brood.*—The frame of comb is not in itself of sufficient value to make any risk worth running, and clearly, in my judgment, since a sheet of foundation would be as helpful to the bees, the comb would not be worth cleaning as you describe by removing dead larvæ with a pin, and spraying with salicylic acid. The brood in it is only chilled, then why spray with salicylic acid at all? Germ diseases are the result of the growth and multiplication of distinct organisms, and *Bacillus alvei*, by example, could be no more produced by chilling than could raspberry canes be raised from onion seeds. To get *Bacillus alvei* you must have the parent *Bacillus* or its spore. Only those absolutely ignorant on the question have ever reasoned that one organism can be transmuted at once into another. If you give your comb as it is, the bees will clean it out more skilfully than you possibly could. 2. *Honey.*—Honey in removed frames even if unsealed will keep perfectly in a dry place until the autumn. 3. *Enamelled Cloth.*—The cloth is suitable. It may be used polished side down, but I find unbleached calico beneath it to be an economy.—F. C.

J. B.—1. *Utilising Queens when Uniting.*—You will, of course, preserve the youngest. Old queens have very little value; let out one or two as specimens. They are not worth preserving alive. 2. *Drones flying in Evening.* They were simply airing themselves, or if they did not return to the hive they were being driven out, as is usually the case a little later on than this.

Br. W.—*Requeening.*—Do not think of removing the queens from all your stocks. Remove that from the strongest, and when queen-cells are ripe remove other queens, and give cells. Refer to the article on queen-raising in Cowan's book.

Dear Bees.—We cannot judge of the cause from the information in your letter. You mention excluder zinc. Where was it put? Did you find the bees dead between the combs or on the floor? Were they wet or dry? Has your hive any glass windows? Could the entrance have been accidentally closed? Have you found the foundation supplied to other hives bitten away?

H. M. T.—Having such an opportunity by all means take your bees to the heather.

H. G. B.—When honey is coming in rapidly there is frequently a rivalry between the queen and the honey gatherers which shall fill the empty cells. In your case the latter have carried the day. The filling of your section will quite depend on the weather; and that being at present most uncertain, it is difficult to predict the result of the season.

T. H. M.—*Ants in Hives.*—We have seldom heard of any damage done by ants to bees, though in some of our previous volumes there are one or two instances to that effect. Professor Cook, whom you quote, says: 'Ants are on the top of the hive for warmth. I find it easy to dislodge by them brushing them off.' *Wet* salt, powdered borax, green tansy, &c., are found effective in getting rid of them. Mr. Heddon says, 'Trouble from ants is mostly imaginary.' 2. The bees having swarmed twice, are evidently too weak to enter the super. 3. It is not too late to transfer. Unite the weak hive to the stronger.

Irish Novice.—*Uniting bees in skep to those in bar-frame hive.*—Your plan would no doubt answer, but you would not want canvas as well as perforated zinc. At the same time you could arrive at the same result with far less trouble and time by the ordinary method of causing both stocks to gorge with scented syrup and at once placing one upon the other without perforated zinc between them.

Young Beginner.—1. *Drones cast out.*—It is rather early, they are generally cast out the first or second week in August; but it depends greatly upon the locality. The hive which has not yet turned them out will probably soon do so, unless it is queenless. You had better examine it. Drones cast out will be received in a queenless hive, but in no other. 2. *Management of Stock.*—Your treatment was correct, and you succeeded in obtaining a strong stock, but when it swarmed you should have returned the swarm. The issue of a strong swarm and a cast has destroyed your chance of getting sections filled.

Weiss.—*Feeding.*—Commence to feed as soon as you have taken the honey.

D. P. D.—1. *Extractor for Sections.*—Try Mr. Meadows, Syston, near Leicester. 2 and 4. *Utilisation of unfinished Sections.*—Extract or drain the honey from them, give them to the bees to clear out by putting them behind the dividers of the hives, and store away in a dry place where mice cannot reach them, for use next year. 3. *Completion of Sections.*—Yes, by reversing them you will get them filled into the corners, provided, of course, honey is still coming in.

W. W.—*Failure to introduce a Queen.*—After caging for forty-eight hours, you should have looked for and destroyed all queen-cells commenced. At the end of the second forty-eight hours the chance of acceptance was less, and at the end of twelve hours more when you finally liberated her, refusal was certain. You say you cut out all queen-cells at the end of the second forty-eight hours, and at once liberated her. If you had done so at the end of the first forty-eight hours and caged her again for the same time she would have most probably been accepted. 2. *Visit of Expert.*—Not having furnished us with your name or address we are unable to say whether or not your county expert should have paid you a visit before this time. 3. *Emptying of Sections.*—We are pleased to hear that our advice has been of service to you.

H. W.—1. *Transferring.*—The best plan to pursue is to drive the bees from the skep and to cut out the brood-comb, tie it in a frame, or frames, and place it in the centre of the frame-hive beside other brood if you find any there. Then transfer the driven bees to the frame-hive, on the same stand. You will not find more honey than the bees will require for winter supply. The honey from the skep should be extracted and given to the bees in a feeder, or if used, the bees must be fed on sugar syrup, and frames of foundation supplied to fill up any gaps in the frame-hive. It is too late to put on supers. 2. *Re-queening.*—It will pay better to introduce a queen than to allow the bees to raise one at this late period. Black queens may now be purchased at 1*s.* 6*d.* each.

Simplicity.—1. *Supering second Swarm.*—It is too late to put a super on a second swarm, or indeed upon any hive, unless you have heather within reach. You may extract from the outside combs and return them. 2. *Supering first Swarm.*—Don't put more sections on unless you have heather near. When you remove the sections you may extract from this colony also, but leave to each hive sufficient sealed honey for the winter supply. 3. *Supering Stock-hive.*—No. Do not put on more sections. There is no danger of further swarming. Possibly this hive may be queenless, examine each frame carefully, and if

you cannot find a queen notice whether there are any eggs, if not introduce a queen.

E. O. B.—*Failing to work in Super.*—Are you quite sure that the bees have not swarmed? if not, they may have changed their queen, or they may be suffering from an attack of foul brood. Thoroughly examine the hive, and note the condition of queen, eggs, and brood, also if queen-cells have been formed recently. An *experienced* Expert would quickly tell you after examination of the hive, what ails the bees. From your description we suspect the loss of a swarm, or failure of the queen.

Nemo.—*Wax Scales.*—The bees are merely carrying well-formed wax scales. Bees may always be found so furnished when comb-building is going on.—F. C.

J. C. I.—*Brushing Bees off Comb.*—A number of articles have been brought to use for this purpose, from a goose-quill to a bunch of grass. Fennel is very suitable, but the most effective is the yucca brush. The yucca from which this is made is a native of Southern California. The leaves when the plant has died, are gathered and made into brushes. They are a soft vegetable fibre, and do not irritate the bees. This yucca brush is much used in America, and may be procured from some appliance purveyors in this country.

Sir W. H.—*Bees not entering Sections.*—The admission of light into sections will not induce bees to work in them; it may tempt them to come up with the hope that another mode of egress is being furnished to them. There may be many reasons why they do not remain in the sections. They may be draughty and cold, and the bees prefer the warmth in the body of the hive,—the second tier of sections should not have been introduced until a fair degree of progress had been made in the first; there may not be more honey coming in than there are receptacles for below; or the weather may be adverse. Perhaps if you remove the outside frames, close up the division-boards, take away the second tier, and keep the super warm, with genial weather and honey flowing in, the bees might ascend, and remain to work and store.

A. T. W.—*Varieties of Bees.*—Four small, marked boxes of living bees have been sent to me from the office of *B. B. J.*, that I may determine their race. *A* contains Italians, which I take to be pure, although they are not absolutely even in marking, as the little irregularity may result from the condition of the intestines brought about by packing. The bands are bright and distinct. One dark bee may have been a stranger to the hive whence it was taken. I have, *e.g.*, one colony of Syrians only, and yet a careful search would detect five or six Syrians in every stock I possess. *B.* Hybrids unquestionably, and only poor at that. They certainly are not more than half-bloods. *C.* Hybrids fairly well marked. *D.* Well-marked hybrids. Lest I am deciding upon a case of purchased swarms, I must add that the bees sent by dealers are very frequently not the progeny of the accompanying queen, and it is quite customary to call even black bees with an Italian mother an 'Italian swarm.'—F. Cheshire.

A. T. W.—The bees now sent are very unevenly marked.—F. C.

A. W. Leatham.—Your caution respecting Fr. Dukoupil, the purveyor of Carniolan queens, will be forwarded to our publisher.

Stealing a Bee-Hive.—At the Tynemouth Petty Sessions, Samuel Dodds and Joseph Willis were charged with having stolen a bee-hive, the property of William Parrat, at Wallsend. The prosecutor said that on Thursday last he saw his bee-hive, and, on returning, missed it early on Friday morning. The value of it was *5l.* He gave information to the police, and the prisoner Dodds was apprehended. He admitted the offence, and said he was very sorry for doing it. The defendants having expressed their sorrow, promised to pay the prosecutor the value of the bee-hive. A fine of *5s.* and costs was imposed upon each defendant.—Newcastle Journal.

A Request.—Would some one kindly furnish me with a receipt for making honey biscuits?—Cornish.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 30-August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

August 12.—Taunton Flower Show. Entries close August 9th. Hon. Secretary, E. S. Hammond, 67 High Street, Taunton.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

July 31, August 2.—Royal Horticultural Show, Southampton.

Aug. 18.—Farnborough.

STAFFORDSHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

August 2.—Trent Valley Horticultural Show, Chartley Castle.

August 5.—Darlaston Floral Fête.

August 9.—Gnosall Fête and Honey Show.

August 17, 18.—Bilston Flower Show.

August 19.—Brenwood Flower Show.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION: SOUTH KENSINGTON SHOW.

On Friday, July 30, was opened the tenth great metropolitan Exhibition of Honey, Hives, and Bee-furniture of the British Bee-keepers' Association. By the special permission of His Royal Highness the Prince of Wales, Executive President of the Indian and Colonial Exhibition, it was held in the large and commodious Conservatory adjoining the Albert Hall, South Kensington. The British Bee-keepers' Association are duly sensible of the great advantages gained by the permission thus accorded them to hold their show in such an eligible position. The Exhibition has also been well timed; seeing one of the days in which it was held was the Bank Holiday, thousands have thus had the opportunity of witnessing the products of the honey bee in a most striking and interesting manner.

The fact of the Exhibition being held in a place devoted to the products of the empire of India and the British possessions throughout the world has created not a little surprise, and numerous have been the inquiries why there has been such a marked departure from the original purpose of the Great Exhibition. It is, therefore, desirable to give such a history of the origin of the British Bee-keepers' Show as may account for the position they have acquired.

At the annual meeting of the British Bee-keepers' Association, on February 17, a motion was proposed by the Rev. E. Clay to the effect that it was desirable that a thoroughly representative exhibition of English Bee-keeping should be held during the present year, and that the Committee be empowered to arrange such an exhibition, provided a sufficient guarantee fund be raised for the purpose. Mr. Clay strongly advocated the holding the exhibition this year, seeing it was most necessary to convince the British public that they were able to compete successfully against Canadian produce. The Chairman, T. W. Cowan, Esq., said 'they had every reason to believe that Canada would endeavour to run them close in the production of honey, and it was most important that they should strain every nerve to compete successfully against them.

On that occasion it was further proposed that the exhibition should, if possible, be held in the grounds of the Royal Horticultural Society while the Indian and Colonial Exhibition was in progress. The meeting showed much anxiety to prove, not only to Canadian but to all other exhibitors, that British bee-keepers were alive to the present importance of apiculture, and that they felt that the proof of this would be afforded by having a thoroughly good exhibition, representing the present position and capabilities of English bee-keepers. It was their hope also to be able to have the opportunity of adopting some means of showing their cordiality towards foreign bee-keepers by inviting them to some social gathering, a conversazione or conference, in which the opinions of all on various subjects interesting to bee-keepers might be canvassed and declared.

It was calculated that a sum of 200*l.* would be required to sustain the expense of such an exhibition; and, as the funds of the British Association were not in a condition to defray such an amount, it was determined by the meeting to institute a guarantee fund. This was heartily entertained, and those present showed their appreciation by subscribing a sum of nearly 100*l.*, including 25*l.* from the President, the Baroness Burdett Coutts. The President's remarks on the occasion were much to the point, urging that if an exhibition on an extensive scale was arranged for this year in London it should be thoroughly well done and energetically carried out.

Since that time the spirit exhibited by that meeting has animated the hearts of all bee-keepers, and a determination has been shown to prove that the capabilities of this country for honey production are quite equal to all the demands which may be made upon them.

The Committee have encountered many difficulties in carrying out the views of the meeting, but by energy, tact, and perseverance, assisted by the kind offices of the President, these difficulties have been overcome. The permission of the Prince of Wales has been graciously given, and the show is now being held in the Royal Horticultural Gardens in the best position that could have been selected. The only regret has been that 'the field' has been solely held by the British Bee-keepers' Association, and that up to the present time the foreigners have not put in an appearance. We believe, however, that before the Exhibition closes English bee-keepers will have the opportunity of seeing and discussing the merits of Canadian honey.

And yet we consider that we are indebted to our brother bee-keepers in Canada for the very complete exhibition which has been made. Prince Henry says of Prince John of Lancaster, 'This youth lends mettle to us all;' and so, as from time to time we heard of the great endeavours of the Canadians to show what their comparative young colony could do, and of the subsidising of the Canadian Bee Associations by the Government of the Dominion, it created a healthy spirit of emulation in the old country, and infused a degree of energy and completeness in carrying out all the details of the show.

At this Exhibition several new features were introduced, which have been found to have imparted to it considerable interest. The principal of these was the

competition amongst the counties affiliated to the British Association for the best display of honey produced in the county, and supplied by at least ten members of the County Association residing in various parts of such county. This honey was to be arranged as a trophy, or in such other form at the discretion of the exhibiting county, the quality of the honey, its attractive appearance for market, and artistic effect in staging over, were to be chief points for the consideration of the judges. Eleven counties entered into this competition; and this being the first time, the show partook much of the nature of an experiment; but we feel assured that it has afforded much encouragement for similar friendly competitions in the future.

The opening day of the exhibition was a great success, and not only a success but it may be pronounced a triumph. As the magnet to the pole, so bee-keepers found themselves attracted towards the show; and it was a pleasant sight to witness the happy reunions, the cordial hand-shakings, and the friendly spirit that animated all comers. We were pleased once more to encounter many of our former friends, the Rev. Lawson Sissons, of Norfolk; Mr. R. R. Godfrey, of Grantham; Mr. W. Carr, of Manchester; Mr. W. B. Carr, of Cheshire; Mr. Bennett, of Glasgow; Mr. Dunman, of Dorsetshire; Walton, of Leamington; Sells, of Uffington; Woodley of Newbury, Webster of Wokingham, the 'Platelayer,' and others too numerous to mention, who showed their sense of the importance of the gathering by leaving their respective homes and attending the show.

'It is the secret sympathy,
The silver link,—the silken tie
Which heart to heart, and mind to mind,
In body and in soul can bind.'

While we are writing the Exhibition is still being held, and therefore we can only touch upon the more salient points; and we hope to present to our readers in all good time the official reports of the judges. To these judges we feel that we are under a deep debt of gratitude for all the trouble taken by them. Their work was most difficult and irksome, and the judging occupied them a considerable time, so numerous were the exhibits and so evenly balanced were the merits of the exhibitors. There were about 250 exhibitors and 350 entries. The judges were,—Thos. W. Cowan, Esq., C. E. Fletcher, Esq., R. R. Godfrey, Esq., Walter Martin, Esq., and P. H. Phillips, Esq.

We have thus traced the circumstances which caused this great Metropolitan Exhibition to be held in connexion with the Indian and Colonial Exhibition. It has proved by far the best Exhibition held by the British Bee-keepers' Association, and we may consider it a grand success in every respect. The Conservatory was prettily decorated with flags, flowers, palms, and ferns, giving a pleasing effect, and showing up all the exhibits to their very best.

On entering from the east side, one could not help exclaiming, 'What a grand display of honey!' and noticing the rapid strides bee-keeping had made within the last few years. Not only was the honey of a superior quality, but it was shown in such an attractive form. Sections were all glazed, and exhibited in pretty show-boxes, whilst extracted honey was done up in a variety of different shaped bottles.

The first class that came under our notice was the County Competition. The eleven exhibits did credit to the counties, and showed that real good work had been done by their respective secretaries and committees. Each exhibit occupied a table or stand six feet square, and the honey was differently staged and arranged, so that the variety of decorations added much to the pleasant effect of the whole.

We will now proceed to briefly notice the various exhibits. Berkshire came first with a varied collection of honey in various shaped bottles and sections. Large glass supers were not forgotten, and in the front of the stand was the pretty representation of a cottage in glass filled with comb-honey. Buckinghamshire. This was a very pretty stand of a rustic design, surmounted by an elaborate canopy of the same work, with a large quantity of fine honey nicely staged. Essex had a good representative display of honey, but nothing particular in the staging. Herefordshire. Plenty of all kinds of honey; pyramid of sections in the centre. In this stand the green background gave the honey rather a dark appearance. Hertfordshire. This had a large variety of honey, and the many ways in which it was put up made it very attractive. In the front of the stand was a very pretty device, worked by the bees, and representing in comb-honey 'God Save the Queen.' We do not know whether this was done in honour of her majesty, Queen Victoria, or the queen-bee herself.

Kent. Some excellent honey, the pyramids of sections and bottles alternately at the corners looked pretty, somewhat improving the general effect which otherwise was a little stiff in the arrangement.

Lancashire and Cheshire. A grand display of very beautiful light honey, gathered exclusively from white clover. The staging consisted of a series of shelves radiating from the centre to the corners, supported by small pillars on which bottles were placed. The centre was backed with looking-glasses, sections being arranged in front, and the light reflected from the glass showed up the honey to great advantage. At the top was a flag with the words 'White Clover Honey,' and this was supported by blue flags on either side.

Middlesex. Most imposing exhibit, arranged to represent a castle, several tiers of sections from which sprung pillars surrounded by bottles. These again supported rows of sections which were surmounted by castellated battlements in light blue, in the centre of which was a straw hive. At the corners of the staging were four small forts, enclosing bottles and sections, the whole made gay with small flags. The decorations throughout were of light blue, keeping up the general effect. In this county we noticed some beautifully finished sections.

Norfolk. Nearly all light honey, of very superior quality. The decorations were backed with silver paper, which threw up well the different shades; a square block of sections in the centre looked very well.

Surrey. A fair collection of honey in this exhibit, but the dark blue background, as in the green already mentioned, rather took away from the look of the honey.

Wiltshire. The staging was one of the most artistic of the whole, having a very light appearance, the red background throwing up the honey splendidly. The tiers of bottles and sections were charmingly arranged, interspersed with flowers. On the straw hive at the top was a banner in blue with gold letters.

Class 2, For the best 36 1-lb. Sections.—In this there was some excellent honey shown, Ireland coming well to the front with some particularly fine sections.

Class 3, For the best 24 2-lb. Sections.—This was very poorly represented, only three exhibits being staged.

Class 4, For the best 48 1-lb. bottles of Extracted Honey.—Here, as in the 1-lb. Section class, was shown some very superior honey, and the judges must have experienced some trouble in making their awards.

Class 5, For the best 36 2-lb. bottles of Extracted Honey.—Here the competition was not very keen, although the quality of that shown was good.

There was a great improvement over past exhibitions in the staging of sections and bottles in Classes 2, 3, 4, 5, they being arranged on a series of narrow shelves ladder fashion, so that all the sections were visible and giving a pleasing effect.

Hives.—There were two classes for hives, class 8 being limited in price to 20*s.* unpainted. In this class the competition was very severe, and it was past three o'clock before the prize tickets were put up, the judging having

commenced at 10.30. There were thirty entries, and it appeared to us that different exhibitors had different ideas of the meaning of storifying hives. Some only exhibited one body-box, which is not sufficient either for storifying or doubling, for which these hives were to be adapted. The first prize was awarded to Messrs. Dines and Son for a very well-made hive, although it contained some faults which we should like to see removed. A hive should be as simple as possible, and the extra lift to this first prize hive is altogether superfluous, as, by deepening the cover, room could be made for sections, or even these could be worked inside the upper body-box by removing the frames. The second prize went to C. T. Overton for a modification of a Cowan hive. We should prefer the alighting board a little wider, and room in the body-boxes for an extra frame and division board. The frames are fitted with metal ends, and the roof is covered with zinc. The third prize went to Messrs. Neighbour and Sons for a very useful hive with two body-boxes, which, like the previous one, are perfectly interchangeable, and can be put at the top for doubling, if wanted, at the bottom. Certificates were awarded to Messrs. Howard and Meadows,, T. B. Blow, and S. J. Baldwin—all their exhibits being well made. Highly commended, A. T. Adams; and commended, T. B. Blow.

We think that a little more care should be shown by some of the makers to get the frames more accurate than most of these exhibited. With the exception of the outside dimensions, very few were right inside, some thinking that a $\frac{3}{8}$ bar for the bottom is just as good as the standard size of $\frac{1}{4}$. Some are also not put together quite square, so that when they hang in the hive they sometimes nearly touch on one side and leave a large space on the other. With a practical bee-master these little defects, existing more or less in nearly all the hives, are of very little importance, but for beginners they lead to bungling. The hive exhibited by Messrs. Howard & Meadows was put together with Quinby clamps, so that when not wanted for use it could be taken to pieces and packed away in the flat. There were several hives shown in this class, as well as the next, with supers having special sized frames. We think it a great mistake to introduce another sized frame, even for extracting purposes, to the Standard, and were glad to see that the judges did not give any encouragement to this. We should only have one sized frame and one sized section, and in that way reduce considerably our appliances. A reversible hive was shown by A. W. Rollins, most ingeniously conceived, but to our mind as yet too complicated to come into use.

In Class 9 the first prize went to Neighbour & Sons; 2nd to T. B. Blow; 3rd to S. J. Baldwin; certificates to A. T. Adams and C. T. Overton; highly commended, E. Stottard; commended, T. B. Blow, Abbott Brothers. These were all storifying hives, having two body boxes but no racks of sections being required, and the price was limited to 15*s*. The hives were well made and cheap at the money. There were twenty-five entries in this class.

Extractors.—There has been very little improvement in extractors, except that the manufacturers make them stronger than they used to do, and tinned iron has given place to galvanised iron or zinc. Mr. T. B. Blow got a silver and two bronze medals for three Extractors of the Cowan type, as well as a certificate for a similar one without gearing. A silver medal was also awarded to C. T. Overton for the 'Rapid' extractor. Certificates were given to Neighbour & Sons and A. Godman for extractors identically alike, except that one was painted on the outside. Howard & Meadows were highly commended for the 'Raynor;' and Abbott Bros. were commended for their cylinder extractor. There were fourteen entries in this class.

Class 19, Miscellaneous.—Abbott Bros. were showing some very nice lantern and microscopic slides. The Self-opening Tin-box Company had some cheap convenient honey vats to hold $\frac{1}{2}$ cwt., as well as small tins for parcel post made without any soldering. Mr. Walker had some honey cakes which looked very tempting. Mr. Wm. N. Griffin had a most interesting case, showing the many different kinds of honey and wax; and in which very much interest was shown by the public, proving most instructive, and it cannot fail to be of value to bee-keepers generally. He also exhibited in the same class some very nice section-boxes with glass sides and hinged covers, to permit the sections being easily removed for examination by judges at shows. Rev. V. H. Moyle had a fine exhibit, comprising articles of food, beverages, confectionary, medicines for man and beast, in which honey forms an ingredient; his things are most tempting, we tasted the chocolate and honey, and were much pleased with the fragrant honey water.

Messrs. Barr and Sugden had a very pretty collection of bee-flora, of which the following are some of the varieties shown:—Erysimum, larkspur, candytuft, allium, achillea, mathiola, nemophila, mignonette, malva (mallow), clarkia, lilium, cornflower (centaurea cyanus), asclepias, trifolium (clover), chrysanthemum leucanthemum, meliotus officinalis, campanula.

The following is the list of awards:—

DIVISION I.—HONEY.

I. County Competition, open to the County Associations affiliated to the British Bee-keepers' Association, for the best Display of Honey in any form. 1st, Lancashire and Cheshire; 2nd, Hertfordshire; 3rd, Norfolk; 4th, Buckinghamshire; Certificate, Wiltshire.—II. For the best 36 1-lb. sections of Comb Honey. 1st, W. G. Preece; 2nd, T. Elderkin; 3rd, T. Sells; 4th, Mrs. Tom; H.C., C. Drake, W. H. Read, W. J. Stanford.—III. For the best 24 2-lb. sections of Comb Honey. 1st, T. Sells; 2nd, A. D. Woodley; 3rd, Miss M. L. Gayton.—IV. For the best 48 1-lb. bottles of Run or Extracted Honey. 1st, R. W. Lloyd; 2nd, E. Clowes; 3rd, Rev. J. A. Kempe; 4th, Rev. C. G. Anderson; H.C., L. Belsham, W. J. Stanford, W. H. Menear.—V. For the best 36 2-lb. bottles of Run Honey. 1st, Rev. J. Sunderland; 2nd, A. Kendle; 3rd, Thos. Sells; 4th, Miss M. L. Gayton.—VI. For Exhibits of Honey produced by the Exhibitor's own Bees. Silver medals, Bee and Fruit Farming Company (Limited), and W. Woodley.—VII. For Exhibits by Honey Merchants of Honey produced in the United Kingdom. Silver medals, Neighbour & Son and The British Honey Company (Limited).

DIVISION II.—APPLIANCES.

VIII. For the best and most complete Frame-hive for general use in an Apiary, capable of being used for doubling, or of being storified with one or two Crates filled with $4\frac{1}{2} \times 4\frac{1}{2} \times 2$ Sections, to obtain Comb-honey, price of the whole not to exceed 20*s*. unpainted. 1st, Dines & Son; 2nd, C. T. Overton; 3rd, Neighbour & Son; Certificates, Howard & Meadows, T. B. Blow, S. J. Baldwin; H.C., A. T. Adams; Commended, T. B. Blow.—IX. For the best and most complete Storifying Hive, price not to exceed 15*s*. unpainted. 1st, Neighbour & Son; 2nd, T. B. Blow; 3rd, S. J. Baldwin; Certificates, G. Stothard, A. T. Adams, C. T. Overton; Commended, T. B. Blow, and Abbott Brothers.—X. Extractors, selling price not to exceed 35*s*. Silver medal, T. B. Blow; Two Bronze medals, T. B. Blow; Certificates, Neighbour & Son, A. Godman, T. B. Blow; Commended, Abbott Brothers and Howard & Meadows.—XI. Smokers, or other appliances for quieting Bees. Bronze medal, Abbott Brothers, C. T. Overton, W. B. Webster; Two certificates, Neighbour & Son; Commended, Abbott Brothers, Howard & Meadows.—XII. Feeders. Silver medal, Howard & Meadows; Bronze medal, Howard & Meadows, T. B. Blow, S. J. Baldwin.—XIII. Two Section Racks, complete, containing $4\frac{1}{2} \times 4\frac{1}{2} \cdot 2$ Sections with Separators, &c., ready for being placed upon the Hive. Two bronze medals, Neighbour & Son; Two bronze medals, Abbott Brothers; H.C., Abbott Brothers; Commended, Howard & Meadows; Two Commendeds, T. B. Blow.—XIV. Travelling Crates for Comb and Extracted Honey. Silver medal, Abbott Brothers; H.C., H. Jeanes; Commended, Neighbour & Son, S. J. Baldwin.—XV. Frame-

ends, to be exhibited on three Standard Frames. Bronze medals, Neighbour & Son, J. M. Hooker; Certificate, F. Lyon; H.C., C. T. Overton.—XVI. Swarm Boxes for Travelling, with Frames capable of being used as a Nucleus Hive. Silver medal, S. J. Baldwin; H.C., C. G. Harrison, Howard & Meadows.—XVII. Comb Foundation, not exceeding 2-lbs. of any kind, manufactured by the Exhibitor. Three Bronze medals, Neighbour & Son; Two Bronze medals, Abbott Brothers; two H.C.'s, T. B. Blow.—XVIII. Useful Inventions introduced since 1883. Silver medal, Self-opening Tin-box Company; Bronze medal, Abbott Brothers, J. M. Hooker, W. B. Webster; Two H.C.'s, Abbott Brothers.—XIX. Miscellaneous; Articles of Food or Beverages, Bee Flora, or any other article interesting to Bee-keepers, not enumerated in the foregoing Classes. Silver medals, Abbott Brothers, A. Godman, Self-opening Tin-box Company, Rev. V. H. Moyle; Bronze medal, A. Fry; Certificates, W. N. Griffin, T. B. Blow, Barr & Sugden; Commended, C. Redshaw, T. B. Blow, G. Walker.

THE CONFERENCE.

On Saturday, July 31st, at two o'clock, the first day's Conference of the British Association was held in the Conference Hall of the Colonial and Indian Exhibition, South Kensington.

There was a large assemblage of members and persons interested in bee-culture present, amongst whom were Mr. T. W. Cowan, Captain Campbell, the Rev. F. T. Scott, the Rev. E. Bartrum, D.D., the Hon. and Rev. Henry Bligh, the Rev. F. S. Sclater, the Rev. J. L. Sissons, Mr. G. Walker, the Rev. F. G. Jenyns, Mr. H. Jonas, Mr. J. Garratt, Mr. J. M. Hooker, Mr. W. N. and Mrs. Griffin, Mr. H. M. Appleton, Miss Gayton, Mr. C. E. Fletcher, Mr. W. Carr, Mr. T. Sells, Mr. J. Walton, Mr. W. Woodley, Mr. E. J. Burt, Mr. W. Dixon, Mr. F. Lyon, Mr. Henderson, Mr. R. Daintree, Mr. J. P. Kitson, Mr. R. Filmer, Mr. A. Watkins, Mr. Marriott, and Mr. C. T. Overton.

The proceedings commenced with the reading of a paper, entitled 'The Development of Bee-keeping as an Industry,' by the Chairman (Mr. T. W. Cowan), as follows:—

In coming before you to-day it affords me great pleasure to be able to greet so many British bee-keepers, and also on behalf of the British Bee-keepers' Association to extend to our Colonial brethren a hearty welcome. When I see so many bee-keepers before me I think we may inquire why they meet here at so great an expense of time and money. The exhibition of hives, appliances, and honey, is one inducement, but amongst the benefits to be derived from our meetings is the social intercourse between bee-keepers. Hearty greetings and hand-shaking are expressions of sympathy and friendly feeling, which encourage each to extra exertion and sustain in difficulties. Comparison of the results of each other's labours prompts us to a friendly rivalry, and comparison of ideas frequently awakens trains of thought which result in benefit to bee-keeping generally. We frequently meet those whom we have only heard of in the *Journal*, and by studying their characters we can judge of their ability which will aid us in future in reading their communications to separate the good from the bad. You will have the opportunity at this Conference of hearing several papers read, and you are invited to join in the discussion of the various questions raised.

Bee-keeping.

Bee-keeping, like all other branches of science, which have developed the resources of the world, has had its origin in ages past. They are all but accumulations and scientific combinations of ideas and inventions scattered by past generations in their march from ignorance, superstition, and bigotry to intelligence, knowledge, and science. Of the antiquity of the bee we have positive evidence, and we know from the fossil remains found in the tertiary geological formation that it existed some considerable time before we have any traces of man on our globe.

I do not intend to give you a history of the bee and bee-keeping from the earliest times, but I should like to point out what I consider has been instrumental in a great degree in developing bee-keeping to its present extent during this century, and rendering it no longer a matter of chance, but as certain and more remunerative with small outlay than any other rural occupation. Much ignorance prevailed with regard to the honey-bee, and to Huber belongs the credit of throwing much light on the subject. He, although totally blind, was, through his faithful servant Burnens, able to solve many mysteries, and he saw and did more for bee-keeping than any one man before or since his time. To him also belongs the credit of making and using the frame-hive, which has since been developed to its present practical form. Many names, such as those of Langstroth, Munn, Dzierzon, Berlepsch, Woodbury, and De Beauvois, are connected with the introduction of the moveable comb-hive.

The principal requisite of a hive is simplicity. There have been many inventors, but few who have made so careful a study of the habits of the bees and constructed their hives with a special adaptation to their nature as Langstroth. Although invented thirty years ago it is still a pattern of simplicity and perfection, and the principle is used more extensively than any other frame-hive. The frames are a happy medium between the deep and shallow. The one is best for rapid breeding, the other for surplus. The bees in this hive get the right depth to secure the best results of both.

Form of Hives.

Many changes have been made, and improvements, so called, to remedy imaginary defects, are often worse than these, and result in complication. Some hives are so complicated that although they are pretty and ingenious when occupied, become so firmly fixed that to loosen them upsets and annoys the bees, making them much more difficult to control.

The form of hive must facilitate the greatest possible production of honey, and this is the case with hives when the room for surplus is given in the direction in which the bees are naturally inclined to store it. This, experience has shown, to be above the brood-chamber, and it is particularly so for the production of comb-honey, for warmth is necessary, and this is better secured when it ascends from the brood-chamber upwards. Opening hives at the top is always preferable to the side, as in German and Italian hives. Besides, hives can also be worked on the top of each other on the tiering plan when wanted for extracted honey.

Improvements in hives have succeeded each other so rapidly that we often find old features being reintroduced; and here I would point out that a hive recently extolled by our American bee-keeping brethren is very similar in prineiple to hives used in this country for a number of years. The Stewarton has shallow body-boxes, with frames which are fixed, and can be used in exactly the same way as the hive said to be destined to revolutionise bee-keeping in America, and the principle has been in use upwards of 200 years. From this the Carr-Stewarton was derived, a square, shallow frame-hive, in which two or more body-boxes could be used. They were interchangeable with each other, and could be used for extracting purposes or for working supers. Strange to say, even a honey-board, with bee space, was provided, but it has all been given up in favour of our present form of hive. Reversing the frames seems to be the chief feature of this new hive, but some better reasons must be shown before bee-keepers will be induced to put aside the style of hive usually adopted. The British Bee-keepers' Association gave a great impetus to bee-keeping by adopting a standard frame, which experience has shown

to be a most suitable size for working, both for extracted and honey in sections.

It is still a matter of opinion amongst bee-keepers whether the frames should have anything to keep them at a certain distance apart, but I cannot help thinking that as the advantages gained by the practical bee-keeper by the possibility of bringing the frames closer together, or putting them further apart, are realised, anything interfering with this movement will be discarded.

There has been too much complication in hive construction, and the aim should be simplicity and as few parts as possible. The Association has been labouring with this end in view, and I am glad to find that judges are also taking it into consideration in their awards.

Other Inventions.

Besides the invention of the moveable-comb hive, the honey-extractor first conceived by Major Von Hruschka has also given an impetus to bee-keeping, and has enabled the bee-keeper to produce not only a larger quantity of honey, but that of a superior quality, perfectly pure, and free from any admixture of pollen or brood, which entered so largely into the composition of strained honey of former days. Comb foundation is also not the least of the important inventions by which much of the work of the bees is saved, the yield of honey increased, and combs of the greatest regularity are obtained, enabling them to be used in the extractor with the utmost facility. Nor must I omit to mention the introduction of the Italian and other foreign races of bees which have played their part in the improvement of our stock and the advancement of bee-keeping.

Scientific Discoveries.

I have just mentioned to you some of the inventions and introductions which have advanced bee-keeping during the present century, but there are also scientific discoveries which have played their part in the progress of the science. Amongst those connected with them stand prominent, besides Huber, the names of Dzierzon, Siebold, Leuckart, Schiementz, Wolff, Dönhoff, and others, who have not only contributed to the literature on the subject, but by their observations and discoveries have settled many doubtful points in connexion with the natural history of the honey-bee.

Co-operation.

In our own country it is not only the improvement and discoveries I have mentioned that have developed bee-keeping, but the progress is mainly due to co-operation or associated action since the establishment of the British Bee-keepers' Association in 1874, and its forty county branches affiliated to it since that date.

There is so much misconception as to the object of Associations, and we are frequently asked what benefits are to be derived from joining them, that I hope to be excused if I go rather fully into the question of co-operation or associated action. Co-operation is a special phase of modern culture and enterprise. It is by no means of recent growth. It began with the dawn of human existence, and found its earliest form of expression in human society. The family, the tribe, the corporation, and state, are various forms under which it has shown, and still manifests its existence. Isolation is incompatible with human instincts and interests. In the early days of mankind the necessaries of existence brought about co-operation for mutual defence and for common subsistence. The spontaneous impulse of a common sympathy brought about co-operation and actuated men to united effort. Out of this common effort grew common rights, which were the roots from which legislation sprang, and upon which rested the foundation of government. But the beneficent results of co-operation were not confined to the family, city, or state, they also manifested themselves in culture and ceremonial which sometimes united people and sometimes placed them in antagonism. Later, when commerce began to be a great factor in human progress, commercial unions were formed, and tradesmen allied themselves for mutual protection. These guilds, of which some still exist in our country, played no unimportant part in the transition from the civilisation of antiquity to that of the modern era.

It is not, however, to ancient or mediæval times that we must look for the fullest development of co-operation. The spread of intelligence quickened all the dormant energies of mankind, and an era of mental and material progress was entered upon unknown to the world before. Associations were formed for the promotion of scientific discovery. The value of united effort was felt and recognised. It is hardly possible to estimate the good done by such societies as the Royal Society, the Institute of France, and others. The impulse given to the cultivation of science, art, and literature, by these societies was immense. The works of the greatest geniuses of the day were brought together, their faults criticised and their merits acknowledged; this led to improvement and invention, and encouraged discovery and perfected art. Encouraged by these older societies others were formed for the advancement of special branches,—thus we have the Geographical, Geological, Microscopical, Linnean, and others, each co-operating for the advancement of some particular science, and through their aid and encouragement the boundaries of knowledge have been pushed forward and heights reached of which our forefathers never dreamed. Another form of co-operation has manifested itself in production, but what I want to point out to you as bearing more especially upon the object for which we are met here to-day is the co-operation of bee-keepers, whose object is to facilitate production. Such associations exist all over the country. I need hardly say that I allude to Agricultural, Horticultural, Bee, and similar Associations. The good these have done is manifest. I have only to remind you that twelve years ago bee-keeping was only carried on by a few, and mostly on the old plan which resulted in the destruction of the bees. When the British Bee-keepers' Association was established for the advancement of bee-keeping and introducing new and improved methods, there were but few members; we have now more than forty county branches affiliated to it, and numbering upwards of 10,000 members, and no one can say that co-operation has not entirely revolutionised bee-keeping in this country during that time. In these Associations the end sought is to determine the principles which render successful production possible, and what individual effort has failed to do the principle of co-operation is rapidly accomplishing. Not only is bee-keeping advanced from a commercial point of view by co-operation, but the science also derives much benefit. When hundreds of intelligent workers are engaged in the same pursuit, their observations, tests, and experiments, can be brought together, put in every light, viewed from every standpoint, and inferences which the seemingly established facts warrant, if not conclusive, are provisionally accepted till further light is thrown upon them. Then the workers leaving the well-established to take care of itself, apply themselves to collect further facts in order to refute or establish that which was provisionally accepted. The certainty that by co-operative effort error will, however plausible, be exposed and eliminated, tends to make men less vehement in the defence of views still open to question and more tolerant of the opinions of others. The results of co-operative effort have already been conspicuous in some branches of bee-keeping, both here and abroad; but we must have co-operation and associated action in all branches before we shall be able to see apiculture on an equal footing with other branches of industry. A unity of action is necessary in all the

different parts of apiculture, not alone in placing our products in the markets, but also to ascertain the yearly production by reliable statistics.

One step in this direction is being taken by the centralisation of our products in the various markets. Accurate statistics are not yet collected all over England, but I am glad to find some of the counties already do so, and I hope before long this good example will be followed by all. Uniformity in honey packages is being gradually arrived at for comb honey, and also those for extracted honey must soon follow.

Success in Bee-keeping.

I have shown you that during the present century bee-keeping has made rapid advances. It has been reduced to a science, and is capable of becoming, as part of agriculture, a great national industry. Still bee-keeping is but in its infancy; and although it forms a not altogether unimportant branch of industry, yet I believe that we are but the pioneers, and there is still much more to be done. We need besides the work of the Associations schools where the science can be taught and where young men could receive certificates. I also think our Agricultural Colleges should take up the subject and have classes which the pupils could attend, as well as a working apiary where they can learn the practical part. In sending out certificated experts the Association has done much in this direction, but much more yet remains to be done, and regular training under able teachers, such as is adopted in other countries, cannot fail to advance bee-keeping.

Now to succeed in any business we must have a pleasure in it. I would therefore never persuade any one to engage in bee-keeping if he has no natural adaptation or love for it.

Who should keep Bees.

We frequently see it stated that all should keep bees, and often have seen articles dilating on the profits of bee-keeping. Such articles are frequently written by persons entirely ignorant of the subject, book-writers or by novices who, having a smattering of the science, think they know it all, and straightway write to the papers.

Not twenty-five per cent of bee-keepers who commence are qualified for the business either by nature or training, these, after attempting for a few years, either give it up or do not make it a success.

Bee-keeping for Profit.

Profitable bee-keeping is not at present carried out to the extent it will be when bee-keepers become more acquainted with the subject. It is an occupation that needs physical as well as mental ability to carry it out profitably. The natural history of bees should be thoroughly understood, and the reason for all operations known. The late Baron von Berlepsch said, 'Learn by all means the theory, else you will remain a practical bungler your whole life.' This is true, and has been proven a good many times.

Bee-keeping on a large scale with a deficient knowledge of the subject is like a large farm badly managed —considerable expenditure and small income. Bee-keeping will pay those who can take advantage of the knowledge already gained on the subject, but bees need more care than the average bee-keeper is always prepared to give them.

Success depends in a great measure upon our queens, and good and prolific queens are only profitable. Prevention of swarming and strong colonies mean *honey*. According to the demand the bee-keeper will work for honey or bees. In some few localities the pasturage is so poor that it is hardly any use attempting to get honey, but in such districts something could be done in raising bees and queens.

To those going into the business I would say acquaint yourself with the wants of the bees at all seasons of the year and attend to them, otherwise better not undertake it at all.

Improvement of Bees

Is a question of most vital importance to every bee-keeper. The animal as well as the vegetable kingdom is governed by a universal law, by which improvement or development can be more or less brought about. The higher the organization the more easily does it come under its influence. We have illustrations of it in our breeds of horses and cattle, and even our vegetables and fruits have been developed by careful cultivation and selection to their present excellence. Within the recollection of most of us the number of varieties of apples have doubled, and these all originated from the crab-apple, which is anything but palatable.

We have ample reason for believing, and in our own experience ample evidence, that this law of improvement can be made to operate in the development of the many good qualities of bees. Every bee-keeper knows that there is a very great difference in colonies of bees, and some under the same conditions will be far superior to others.

The introduction of Italian and other foreign races has done some good by introducing fresh blood, but a great hindrance to improvement has been in the introduction of cheap queens. Queen-breeding requires for its success more care, precision, tact, and industry, than many bee-keepers possess, and many of the queen-breeders who make a business of it have not the natural qualifications for it. The demand for Italian queens has been so great that it is not surprising that inferior queens should have been introduced, especially as bee-keepers have required them at a low price and the only conditions have been that they should be pure. I have myself seen in Italy a vast difference in various colonies, not only in the markings, but also in their working capabilities. Another drawback to the improvement of bees is allowing the queens to be superseded by the workers, either through old age or accident. Now I wish to point out that good breeding stock can only be obtained by the most careful selections of both queens and drones. No breed can be improved without some standard of excellence, and I should state the following points be aimed at in breeding for

Good Queens.

I do not care for colour in a queen, too much has hitherto been sacrificed for this, but I consider a good queen should, *first*, be large and lively. I say lively because there is a great difference in queens. Some move slowly and work slowly, and I have found the most lively ones to be the most active in laying. *Second*, she should commence to lay early and lay abundantly all summer and until late in the autumn. It is only such queens that reproduce the most vigorous queens and are always strong. *Third*, she should produce workers that are good honey-gatherers. Now experience has proved that small bees are not the best. There is a great difference in these, and I find a moderate-sized bee preferable to a very small one, more especially for working in sections. I should not breed from small bees. *Fourth*, her progeny should be quiet and mild in disposition, so that when a frame of comb is taken out they do not rush all over the place and at the same time fly at and sting you during the operation. At the same time they should be prompt in defending their stores from enemies. *Fifth*, she should be a non-swarmer, and this I consider a most important quality. All must have observed that in equally strong colonies some would more readily take to sections whilst others instead of going into them would prefer to swarm. This tendency to swarm can be bred out by carefully selecting from those queens for breeding which are content to stay at home and attend to business, by keeping the combs full of brood, and consequently the supers full of bees.

Besides the careful selection of queens having the above qualities, it is necessary in order to improve our

queens that all the conditions for their development be as perfect as possible. When we have placed our colonies in these conditions we may have good queens, but we must also have fine drones to fertilise them, or we shall make slow advances towards improvement. We must also select our drones from the best colonies, and ensure our queens mating with them. With good stock to breed from, and by constant selection brought about with intelligence, science, and skill, I have great hopes that in a few years we may have a race far superior to anything we have now. I would not discourage the introduction of foreign races, as I am quite sure they possess many excellent qualities, and by carefully breeding for these the bad qualities can be eliminated. Far too much has already been sacrificed to appearance, other more important qualities being overlooked. It is, therefore, most important that bee-keepers and queen-breeders in the future pay more attention to selection than they have hitherto done.

I should place prolificness of queen, hardiness, activity, and good temper of workers first, then colour. Aim to have your queens reproduce themselves in fecundity, and in ability to generate the most vigorous and industrious workers, then for amiability, and lastly for beauty.

Hindrances to Bee-keeping.

Some say that there are so many risks in bee-keeping that it is really more a lottery than a legitimate business. Amongst other things the obstacles mentioned are failure to succeed, stings, foul brood, bad seasons, difficulties of wintering, and over-stocking the markets. When we see a number of failures, we ask, What is the cause of them? I think they are easily accounted for. The old idea that bees will keep themselves, and return us fabulous profit for little or no investment of capital or labour, is not yet exploded, and is a stumbling-block to bee-keeping. The ignorance of the subject is responsible for a large proportion of the failures. Before beginning, the business should be learnt. It is as important to serve an apprenticeship to this as to any other business. Much information can be gained from books and journals, but actual practice in the apiary is indispensable. More depends in this than in any other pursuit on the right things being done at the right time and in the right way. Some of the failures occur from beginning at the wrong time. Some commence immediately after one or two good honey seasons, the results of a favourable year being very attractive to beginners. After these, generally bad seasons follow, which disappoint them. I should advise to begin after a poor season, with a better chance of success. Beginning on a large scale before knowing the business also ends in failure. Begin with one or two hives, and become thoroughly acquainted with the management of the bees, and then increase.

Another cause of failure is the fear of stings. Every bee-keeper should be provided with veil to protect the face, and a smoker or bee-quieter of some sort. Gloves I do not recommend, but if they give confidence, and persons suffer much from stings, by all means wear them. The best substance for the purpose is American cloth, much used on the Continent for this purpose. Some substances bees are less inclined to sting than others, and this is one of them.

Foul Brood.

With respect to foul brood, it has in some places been a great difficulty, but we now have several remedies more or less effectual in curing the disease, and we have the testimony of some of the leading bee-keepers in Europe of the efficiency of salicylic acid, phenol, camphor, and other remedies. I wish that I could say we knew of a remedy that was effectual in the hands of every bee-keeper, and in all conditions under which foul brood exists, but at present we have no such remedy. I may mention, in passing, that it appears much more difficult to eradicate foul brood when the ovaries of the queen are affected; and Hilbert, so long ago as 1876, at the meeting of the German National Bee-keepers' Association, pointed this out, and stated that out of twenty-five hives treated by him, he found three such queens. I have had opportunities to confirm this, and have found in obstinate cases of foul brood that the removal of the queen, and her replacement by another, aids materially in effecting a cure.

Bad Seasons.

Bad seasons are an injury to bee-keeping, but these come to every business depending upon the weather, such as gardening and agriculture; and in calculating the profits of bee-keeping we must make allowance for them.

Wintering.

Wintering is much better understood now than it formerly was, and if certain rules are observed there is very little difficulty in carrying our bees safely through any winter we may have. The requisites are plenty of young bees, young queens, only so much space as the bees can crowd, ventilation without draughts, and sufficient sealed stores, and comfortable quarters.

Creating a Demand for Honey.

There is an old saying which will bear repeating, that 'he who causes two blades of grass to grow where only one grew before is a benefactor to his kind,' and it is equally true that he who causes two pounds of honey to be consumed where only one was before is an equal benefactor to his bee-keeping brethren. Success in bee-keeping, like in all other pursuits, could be expected with much more certainty if bee-keepers were sure that there was a demand for honey. We have tried the experts selling, and we have the Honey Companies, but, after all, creating the demand depends in the first instance, and to a considerable extent, on the bee-keeper himself. He should know how to produce the very best article possible, and most bee-keepers have realised this necessity by finding out that if they wished to sell their honey they must get it up in neat, small packages, convenient both for the retailer and consumers.

The particular way in which the honey should be stored must depend upon the requirements of the market in which he sells, but we have had ample evidence that small packages do create a demand, for many people will purchase a section of comb-honey, or a jar of extracted, who would not look at a large super. For the same reason, we find now honey in grocers' shops who would not keep it before, because it was so messy.

I should advise all those who can do so to create a market for their honey in their neighbourhood. Let grocers have some sections and jars neatly got up to put in their windows, and if they cannot sell all they produce in this way, or do not like the trouble of it, then to sell it to one or other of the Honey Companies. As a rule, when a customer has tasted one jar of honey, he comes for another, and by degrees the demand for honey is increased.

Adulteration.

Much harm has been done by adulteration, and the dealer should be taught the difference between pure honey and glucose. Many also imagine that bee-keepers feed their bees on sugar, and that they store this in the combs; they should, therefore, be taught that the intelligent and honest bee-keeper carefully avoids feeding bees when they are gathering honey, so that the honey should not be contaminated with syrup. The dealers have so long been deceived with glucose being sold to them for honey that it is not surprising that they raise doubts when they have the genuine article brought before their notice, especially as a higher price is asked for it.

Price of Honey.

There are constant complaints that the prices of honey are low. They are much lower than they were a few

years ago. But we must bear in mind that it is the supply that has caused this downward tendency, as well as the competition with other countries.

It is also probable that those who are now producing honey will with increased facilities and experience be able to produce a larger amount, and that at a cheaper rate. I venture to say, with upwards of twenty years' experience, that we not only can, but do produce more than double the quantity of honey we formerly did without any increase in the cost of production. How many of us used to be satisfied with twenty or thirty pounds per hive who can now with greater facility produce eighty to one hundred pounds per hive. And I believe that we have not yet reached the limit of production. The Americans have exceeded us owing to their favourable pasturage, and I do not expect we shall ever reach the figures reported by them; but I believe by simplifying methods and appliances much can yet be done to increase the honey harvest. All industries have passed through the stages that bee-keeping is in now.

When there were few producers prices were high. This attracted others into the business, and prices, owing to greater competition, fell. This greater competition improved the articles, and increased the demand at still profitable prices. Producers were stimulated to increased efforts. At last markets got glutted, and prices fell very much, to the despair of the producers. The large quantity, however, was a means of advertising the article. It forced itself on the notice of the public, and by its tempting appearance people could not help being attracted to it. Owing to its cheapness, people were able to purchase it who would not have thought of doing so before. When prices were high, it was only patronised by the wealthier people, but when cheap it was bought by the poorer classes. The consumption increased so that the largest producers found that they could sell as regularly as any other produce, such as vegetables and fruit. The fact that the tempting package was right before the customer, and at such a low price that he could afford to buy, created a demand. Every industry has had the same history. Although the bee-keeper will make much less per pound, he will make much larger profits.

Conclusion.

In concluding, I feel that I have not nearly touched on all the subjects I ought to have done, but have given you an outline of the development of bee-keeping as an industry. Our show, the largest ever held, is a testimony to the progress made, for those who see this, and remember that in one of the worst years we have had for a long time we have 340 entries and 250 exhibitors, nearly double what we had a few years ago, will regret that our Canadian friends did not manage to hold their exhibition at the same time to compare results. All those Colonial brethren who are present we give a hearty welcome. I believe that bee-keeping is still in its infancy, and that in the future, when it shall have been extended as it undoubtedly will be, means of livelihood will be opened up in this country to the industrious and the frugal from this source, the value of which I will not attempt to estimate. I hope that this Conference will be entirely harmonious, and be as productive of good as it is leasant.

Discussion.

The Rev. F. T. Scott said he laboured under considerable difficulty in following so able a paper as that to which they had just listened. There was no one in the kingdom better qualified to speak on the subject which he had chosen for his paper than the Chairman, who had done more towards the development of bee-keeping than any other man. Mr. Cowan's acquaintance with the subject was not confined to England alone, he was thoroughly well informed in regard to foreign bee-culture, and he (the speaker) would advise every one to read the lecture, for he was sure they would find much profitable instruction in it. He was very pleased to say that despite the bad season in England, the production of honey had been most extraordinary. He had been a bee-keeper more than forty years, and he hardly ever knew a worse season than the present. There were many acres in Kent where they had not been able to gather any honey at all. He felt sure all those who had seen the exhibition would say that English bee-keepers had managed to scrape together a respectable show of honey. He had searched in vain for the produce of other lands, but he hoped before the Exhibition closed to see there some foreign honey as well as bee-appliances. He was glad to see so good and varied a show of hives, especially large ones, because it was most important for bee-keepers to have roomy hives, where the bees had plenty of space to work in.

Mr. Garratt complimented the Chairman on his able paper, and said he came to that meeting hoping to hear some information from Colonial visitors as to their doings, and methods of working. Mr. Cowan's topics suggested to his mind that there were many points in which most of them who had been practising scientific bee-keeping had still much to learn. They found that old theories in reference to bees and their management were continually being reviewed and corrected, and thus additions to knowledge were constantly being obtained. With regard to foul brood, perhaps, they ought to be more conversant with the character of the disease, and understand it more in its varying degrees and different stages. The Chairman had explained that it was very difficult to cure when the ovaries of the queen were affected. The subject was very important, and he was surprised to hear that there was no certain cure of the disease. The remedy propounded of removing the queen and replacing her by another seemed to him a very extreme one; but the Chairman, with his superior knowledge, was able to speak authoritatively. He considered the promotion of bee-keeping amongst the working classes was one of the most important features of the Association's work. Those who had adopted it, and dealt with the question on economic grounds, recognised generally that bee-keeping as a hobby was extremely interesting, and might be made sufficiently profitable; but sometimes there was an inclination to travel too fast. From his experience, he would suggest that everybody must be on his guard as to how far he advanced with his bee-keeping establishment. That industry was similar to poultry-keeping. If carried on on a small scale it might be made to pay its way, with, perhaps, a little in pocket; but on a large scale, considerable care and experience was required in the management, or failure was inevitable. It was highly desirable that they should have the benefit of the experience of foreign bee-keepers. The subject was a progressive one, and was advancing rapidly, but the present phase of it was highly interesting.

Mr. H. Bunbury said it seemed to him that beginners had a great difficulty in knowing what hive to choose. Improvements and alterations were made in hives every year, and prizes were given to the inventors or adaptors yearly. The working classes and cottagers were thus placed at a disadvantage, because they could not buy a new hive with the latest improvements every year. Nearly all the books on bee-keeping advocated different hives.

Mr. Brown said he lived in an agricultural district where the straw skep was in use, and he thought the best and simplest way of instructing and helping forward a cottager was to commence by showing him how to put a section crate on the old hive. If he were intelligent, and wished to progress, he would soon begin to look forward and see what improved hive he could get. The County Associations had done much good in that way. When the intelligent person saw the sections

brought into market with the expert driver, he soon began to learn to manage the section crate on his old skep. After this, step by step could be taken until the bar-framed hive was gradually introduced to the cottager's acquaintance. As years went on the increase of honey was being doubled rapidly, and they must soon be prepared to take a less price for their honey.

Mr. F. Lyon agreed with the suggestion of the previous speaker, and said the working classes must not try to do too much at first. He thought that if the cottager could be made to understand that he would obtain better honey by adopting the bar-framed hive than by continuing with his old skep, he would not be slow to make the improvement. The question of expense was rather a formidable obstacle, because very few cottagers could afford 1*l.*, 15*s.*, or even 10*s.*, for a hive. At local shows every effort should be made to provide cottagers with a hive that they could buy for a few shillings. He thought, in many instances, the working classes might make their own hives.

The Chairman thanked Mr. Scott for his complimentary remarks. He did not quite agree with that gentleman in describing their honey show of this year as a 'respectable' one. He thought they were justified in saying it was a grand display, and one which had eclipsed all former efforts. Moreover, the exhibits were all arranged in a neat and attractive way. One great feature of the Show was the competition between the counties, eleven counties being represented. Another improvement was, that each exhibit was labelled with the county or district from which it came, so that the public were enabled to compare the produce of one county with another, and draw comparisons between English, Scotch, and Irish honey. In reply to Mr. Garratt, he could only repeat that the cure of foul brood was not certain in the hands of all bee-keepers, but it was undoubted that the removal of the queen did in some cases cure the disease. With regard to the difficulty of choosing a hive, he thought the alterations and improvements referred to by Mr. Bunbury were generally matters of detail, which the purchaser of a prize hive might easily make for himself. Judges were now giving the preference to simplicity in the construction of hives. He quite endorsed Mr. Brown's views in reference to putting sections on the top of skeps. That plan was recommended by the Association in their publications entitled *Modern Bee-keeping* and *The Skep Manual*, in which illustrations were given. They hoped by that means to show the cottager how he could keep bees to the best advantage, and when he had realised sufficient money and enthusiasm he would be induced to invest some of his profits in the purchase of a new hive. As a good serviceable hive could be bought for 10*s.* 6*d.*, he thought it would be hardly worth while, as Mr. Lyon suggested, for any cottager to make his own hive, especially as better value would be obtained in the purchased article.

A gentleman in the audience asked whether the Association published any books or pamphlets supplying information to the labouring classes desirous of commencing bee-keeping.

The Chairman recommended *Modern Bee-keeping*, price 6*d.*, and *The Skep Manual*, price 1*d.*, both of which could be obtained at the Secretary's Office in the Exhibition.

After the discussion on Mr. Cowan's paper was finished, two other papers were read—the first by the Rev. G. Raynor on 'Queen Introduction,' and the second by the Rev. F. G. Jenyns on 'The Promotion of Bee-keeping among the Young,' both of which will be given in future issues of the *Bee Journal*.

The Conference was continued on Wednesday at 3 p.m., when other papers were read.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

A VOICE FROM THE WEST.

[497.] Great was my surprise to see your lugubrious article, in large type, on the 'fatal incident to a bee-keeper,' with the very edifying remarks on the liability of mankind in general, and bee-keepers in particular, to sudden death, with which the said article concluded. Now, Sir, with all due respect to you, I think it was rather a mistake to give such prominence to an incident of which confessedly no particulars could be obtained by you. Had the details of the case been before you, I will venture to say an obscure paragraph in some corner of your valuable paper would have been all the notice assigned to it. I enclose a cutting from a local paper, giving a full account of the incident, from which your readers will observe that (1), the deceased gentleman was seventy-one years of age; (2), that he was subject to fits; (3), that he was entirely unprotected with a veil; (4), that he had fallen once, been raised, and placed in a chair (so feeble was he) before a single bee attacked him; (5), that his companion left him when attacked; (6), that no swarm issued from the hive at all.

A Ludlow Gentleman Stung to Death by Bees.—On Tuesday evening, July 20th, Mr. John Adney (formerly Mayor of Ludlow) was engaged on his property between the Sheet Road and Riverdale, taking honey from his bee-stand, when the bees savagely attacked him, and stung him so severely that death ensued the same evening. The deceased gentleman was seventy-one years of age. An inquest on the body was held on Wednesday evening before Mr. J. H. Williams, borough coroner, and a jury, of which Mr. Edmund Jones was foreman, at the 'Rose and Crown,' Church Street. The following evidence was given:—John Bishop deposed: I live in The Narrows, and am a currier. Deceased was an uncle to me, and was seventy-one years of age. The body the jury have seen is that of my uncle. I was at my field a little after seven o'clock yesterday evening. I went to get some tools to take the honey off the top of one of the hives, and when I returned I found him on his hands and knees. I lifted him up, and asked him what was the matter. Deceased said he had got so simple, and had slipped off his seat. He then came with me to the bees, and we lifted the top off one of the hives. I then told him to go and sit down, as I could manage. I then lifted the top off the next hive, but the bees had got so strong round me that I ran up to the building, and when I returned I found deceased on the ground dead. I tried to pull deceased into the house, but could not, his head being close to the door. The people in the house refused to let me take him in, being afraid of the bees. I did not hear deceased cry out. The marks on the deceased's face are all bee-stings, with the exception of one or two marks. The deceased has not been well for some time, having had some eight or ten fits.—Mr. John Southern, surgeon, deposed: I was called to this case about eight o'clock last night, and as soon as I could get a few things together I went to the scene of the disaster. I found the body surrounded by a large number of persons. On examination I found life extinct. I applied strong ammonia to the nostrils, but there was no sign of life. In my opinion death resulted

from the severity of the stings inflicted by the bees, accelerated by a tendency to apoplexy. The injury to a person of the deceased's advanced age would have a graver tendency than in a younger person.—The jury returned a verdict of 'Accidental death.'

The above details suffice to show how little ground there was for the harrowing paragraph which went the round of the papers. It is very evident that at his advanced age, and very infirm health, the deceased gentleman should not have interfered with his hives, or, if he did, he should have gone protected with veil and smoker, and accompanied by one who would have stood by him when attacked.

I have endeavoured to improve the occasion by offering to purchase the bees of my neighbours (at a reduced price), but in spite of this so-called 'fatal incident' they decline to part them.

Your article however will, I am afraid, cause some searchings of hearts amongst timid bee-keepers who know not the true circumstances of the case. I am sorry, Mr. Editor, to be so 'down upon' you, but—duty before friendship. Besides, you can tone down this chastening to your liking should it be too grievous. Your waste-paper basket, too, is of ample dimension, and I am used to rejected addresses, alas!

But undoubtedly bees are more irascible than in the days of dear old Thorley, Nutt, Huish, and other apiarian antediluvians. Within my own recollection the bees of our neighbourhood have developed an immense degree of aggressive pugnacity. Doubtless this is owing to the influx of foreign blood. Last spring Mrs. Ward, a neighbour, an old woman, endeavoured to hive a hybrid swarm which alighted in her garden while I was in church. She succeeded in doing so, but was so severely stung over the arms that she has never been able to hive a swarm since, her nervous system received such a shock. She keeps bees still, but I hive them for her. The other day a good wife hard by went about eleven o'clock to dig up some potatoes from the garden. She did not interfere with her bees, but they attacked her and stung her severely. As she was near her confinement the consequences might have been serious, possibly a paragraph might have gone the round, and an article appeared in the *Journal* had anything happened to her during her confinement, which fortunately was not the case.

Yes, talking about the proximity of fowl-runs to the apiary, and the dismal fate of J. H. B.'s birds, reminds me of a similar incident which occurred at a Vicarage well known to Dr. Bartrum, when a brood of young turkeys was attacked in the same way and destroyed with the mother. The turkeys were the pets of the Vicaress, and I believe,—yes, I have every reason to believe, that when the announcement was made to her by her husband of the calamity which had befallen her favourites, the succeeding ten minutes were not the most pleasant he ever spent in her company.

I see your columns are full of hints with reference to the taking of bees to the heather. Let me give a hint. *Experientia docet.* Last autumn, Captain Smith (see last number) and myself determined to take six hives, three each, to Whixall Moss. We carefully packed our hives and started for the cottage where they were to be placed for a few weeks. In due time we arrived at our destination without mishap of any kind. Said the Captain, 'Shall we take the horse out while we carry the hives into the garden, or not?' I replied: 'Let us take him out in case of our having a spill.' We did so, but somewhat unwillingly on the Captain's part, who was in a hurry. The horse was placed in the stable and the door shut, and after being closed was tried again (notice that, O cautious C. N. A!). The shafts of the spring cart were placed on a wooden railing to keep the hives on a level or horizontal position. Then the Captain sprang into the cart, and proceeded to carry one in his arms to the writer, who stood ready to receive it at the tail of the vehicle. He made three steps forward when *up went the shafts* and the gallant Captain, the hive still in his arms, with those at the bottom of the cart, were borne, a truly awful avalanche, upon the head of his devoted comrade. John Peel, fortunately, is both a man of courage, resource, and nerve (these are among the least of his virtues), so, instead of scuttling, he, with only one very natural exclamation of agony, held on to the end of the cart to prevent its going further down, and stood to bar the headlong career of the Captain towards mother Earth. In less than a second John Peel's head was in violent contact with the Captain's stomach, the cover of the hive in the Captain's arms flew over the cart tail to the ground, followed by a crate of sections foolishly left on the hive, the bees, delighted to be released, rose to meet the foe. 'Hold on, Peel,' shouted, or rather gasped, the Captain, for the force of the contact with J. P.'s hard head had deprived him of nearly all his wind. 'Hold on for Heaven's sake!' and hold on he did for the space of what might be a minute, but which seemed to his strained muscles an hour, while the captain, still with dogged courage holding the hive, struggled to recover his equilibrium, and at last by a supreme effort fell backwards, and so brought down the shafts again. The other hives were intact at the bottom of the cart, and to put down the uncovered hive, to leap out of the cart, and to make a rapid strategic move into the kitchen of the cottage, was the work of a second on the part of both of us. Then, the door being shut, and over a cigar we congratulated ourselves on the fact of the horse having been placed out of danger in the stable, and that we had had the forethought to place our veils on, the Captain also mildly reminding Peel that *he* ought to have thought of the shafts tilting up. When the cigars were finished, we lighted our smokers and approached the scene of the struggle. The half-filled sections were everywhere, and, of course, covered with bees. Where the crate had been was a dense mass of aggrieved and of astonished insects, full of fight, and on the look-out for us. We subdued them in time, and placed all the hives *in situ*. However, there were still clusters of bees about the shafts, sides, and wheels of the cart, and we were getting rid of them gradually with the aid of our smokers when the owner of the cottage made his appearance, with sleeves tucked up and an open shirt showing his hairy breast. Thinking our process a slow one, and being anxious to oblige, he went for a broom, and in spite of our warnings proceeded to brush the hybrids off in no gentle manner. Two sweeps of the besom were sufficient. Down it went to earth, and off he went in a bee-line, taking in fine style every hedge, fence, and drain, in his way. We never saw him again, though we have visited his cottage several times since. He keeps out of our way. From what his wife tells us, we have reason to believe that as Mr. Blankley, of Denton, would say, 'Bees have sunk several degrees in his estimation since that day.' But I am forgetting the moral, which is—Don't forget that shafts tip up, if you take the horse out and rest them on a rail.

Forgive me, Mr. Editor, but one word more. I had thought of running up to town and going in for the First Class Experts' Exam. at South Kensington, and letting the world know the result through your columns; but friend Huckle courteously but firmly forbade. He reminded me I had not yet passed as third, which might be done through any County Association. But, alas! my County Association is defunct. Died of dignity and prosperity. What am I to do? Will any Western Association take me and my small subscription and give me a chance (*me*, an ex-judge, &c., &c.) of obtaining a third? Don't all reply at once, and Colonial secretaries will please take no notice of my query.—JOHN PEEL.

BEE-KEEPING IN MADAGASCAR.

[498.] Thinking a short account of the Malagasy bee-keepers and honey-takers might interest some of your readers, I send such information as I have so far been able to collect. By far the greatest quantity of the honey and wax, which appears in the markets here, is taken from the wild bee, which inhabits all the forest belt that encircles the island, and also the smaller jungle on the west. The combs are built in some convenient hollow of a tree, generally under the shelter of an overhanging bough, and in most cases having a large quantity of the comb exposed to view. I have been told by the natives that sometimes they are found in a bank, but I have never yet seen one in such a position, although I once saw one taken from in between the leaf-stalks of a low palm, in very dense jungle, growing in the damp mud on the borders of a lagoon. The method of taking was simple, for all that was done was to light a bunch of wet grass and hold it below the comb which was then cut down, the cutter being considerably punished, as he wore no clothes except a loin-cloth; but whether it is that the natives are less sensible to pain than the Europeans or that they show their feelings less, I have seldom seen them wince or even make a sign, but simply remove the sting when they have time to attend to it, and the sting of the Malagasy bee is extremely painful. The quantity of honey in the wild comb varies very much, and as I have seen but few taken and had no opportunity of weighing the honey, I cannot say even approximately what the average may be: in some places the quantity of honey taken yearly is perfectly marvellous. I well remember seeing in one village, while travelling, a huge pipe formed from a tree ten feet long by three feet six inches in diameter hollowed out to within two inches of the outside. Wondering what use it would be put to, I questioned a native, and the answer certainly left me rather doubtful of his veracity: 'It is filled with honey on the great Circumcision festival,' said he (it was in a part of the country still totally heathen, and where all the old customs connected with this universal Malagasy custom were still practised). I cannot answer for the truth of the man's statement, but if such was the case, it means that in the space of short time the people in that one village alone are able to collect 280 cubic feet of honey-comb. I rather suspect that he meant strong mead made from the honey, but was rather shy of acknowledging himself a partaker of such revelling, especially as all strong drinks are forbidden by law. The natives prefer the honey-comb all mashed into a pulp, the more bee bread and pupæ the better they like it, and they disdain what they call the honey-water as insipid.

But although most of the honey is collected from the wild bee, yet there are a few districts in which bee-keeping is carried on to a large extent. Upon one such place I stumbled when on a shooting expedition, and was surprised at the amount of hives in this one small village, at least I should say four on an average to each house; these hives are hollowed trunks of trees, about four feet long by fifteen inches in diameter, with a bung of wood at each end, as these bungs do not fit tightly the bees pass in and out through the interstices. The hives are supported about one foot above the ground on sticks or stones, and over the top is a large slab of bark projecting all round like the eaves of a house to run the heavy rains off. On taking the honey one bung is taken out, a little smoke blown in from a lighted rag, and as much comb cut away as may be wanted. This seems to be the same over all the island, except in the districts where large wood is scarce, and then they place the bees in earthen pots: but as this is never practised except by isolated individuals who have brought their bees from the districts near to forest, it can hardly be called a national custom. When the natives wish to increase their stock they take a hive into the forest, shake the wild comb into it, plaster up the bung with clay and take it home. I have not yet been able to see their method of taking a swarm from their own bees, but I suppose it is done in much the same way.

The price of honey whenever I have bought any on the forest is twopence a biscuit tin full (of the long-shaped kind), or roughly about four or five pounds; you also have the privilege of picking and choosing the best comb. The quality I should say was rather poor as a rule, the comb is very white and thin, but soon discolours. There is one thing in favour of the honey here, namely, that one can eat any quantity straight from the hive without any injurious effects.

I have lately bought a hive (honey, bees, hive, and everything for two shillings), and have transferred them to a hive I have had made for the purpose of observing carefully their habits, but have had time to make but few notes; so, perhaps, if you can afford me space, in a short time I may be able to add some notes of more real interest to your numerous readers.—C. P. C.

QUEEN INTRODUCTION.

[499.] I was in hopes that we should have heard more opinions on the above subject, instead of your correspondents disputing together. It seems to me that it would be better to ascertain, if possible, what is best in each system rather than to try and set down any one as infallible or otherwise. With myself, I cannot say that I have been successful with the *pipe-cover cage*, as I got several killed in trying to release the queen from the ball after setting her free, most of those that were accepted had their wings bitten. I may here mention that Mr. Root, in the *A B C*, says the queen may be released from the ball by dropping her into a cup of water. I have tried this three times, but each time it killed the queen, although on the two last occasions the water was slightly tepid; I should fear a similar result from smearing her with syrup unless great care was used not to close the respiratory organs. I find the best way to release a queen from the ball, is not to interfere with the ball till you have both hands free, then take the ball without disturbing it, set it on the ground, and quickly separate the queen by a series of short dips until no bees remain; should one bee still pursue the queen, lose no time in killing or separating it.

I have tried the Peet cage on two hives, in one the queen was accepted uninjured, in the other brought out dead, on second attempt the queen was accepted but wings bitten. I have tried a cage on the Raynor and Abbott plans on several occasions, and always with success, but then I caged her majesty forty-eight hours and released her at night, and have not examined the hive till forty-eight hours after, as I find an earlier examination frequently leads to balling. I have also in late autumn taken a frame containing hatching brood, and after shaking the bees off confined the queen in a large cage covering the whole frame; by this means the queens have been accepted without injury after three days. I can't help thinking that if a cage is to be used at all it should be one, say, four inches square, to fit on both sides of the comb and having a passage cut for the queen to pass to either side, and at the same time there should be a means of releasing the queen without disturbing the hive, as in the Raynor and Abbott cages.

I have tried 'the law' twice lately, on one hive (in proper condition, &c., which had been queenless about three days), successfully, she was let in just before dark at the entrance; also on a small nucleus of bees for more than a week queenless, she was placed on the feed-hole at 11 a.m. and was certainly accepted, but I believe she was dying through a chill, and I can find no trace of her since either inside or outside the hive.

I tried Simmins' first method, as described on page 45, the other day; this was quite successful, except in so far that, through a misapprehension (and perhaps a little want of

confidence), I examined the hive next day with the result that as I failed to see her at once a few of the bees balled her, but I placed her uninjured in a cage and again let her run down from the quilt into the hive at dusk and have no fear of the result. As Mr. Simmins guarantees this method I should like to know the experience of others: has it ever been known to fail when the proper conditions have been complied with; that is to say, will it answer in the late autumn?

Mr. Root, in the *A B C*, gives a 'queen-cage for cold weather,' and says, in 1884 edition, 'So far, we have had no failures with it.' He describes it as 'simply a piece of wire cloth,' 4″ × 3″, 'pulled lengthwise, so as to make a tube ¾ inch in diameter. An inch of one end of the tube is filled with soft candy, and a two-dram vial, with the usual notch in the cork, is put in the other end. The queen is put into the cage, and it is then pressed between two combs in such a way that the bottle is at the upper end. Of course the cage is put right in the midst of the cluster where the bees cannot help getting acquainted with her.'

From the above I gather, 1. That the queen should be willing to accept her new subjects. 2. That the bees are more likely to accept a sovereign when they are not expecting any disturbance in the hive, *i.e.*, night time. 3. That the hive should be disturbed as little as possible when the queen is given to them. 4. That the hive should not be disturbed until all the bees have had an opportunity of becoming acquainted with the queen. 5. That the bees would be more likely to be in a condition to accept a queen when, firstly, they have young brood and hatching bees in the hive, and, secondly, when honey or syrup is coming in.

I do not see why, in Mr. Simmins' method spoken of, the queen should not be let in at the entrance, instead of at the top of the hive, unless it be that the guards at the entrance might seize her, but would any be on duty after dark?—A. T. Wilmot.

FLYCATCHERS AND BEES.

[500.] Your correspondent, J. W. Blankley, No. 485, asks for information on this subject, and in reply I beg to refer him to my letter in the *Journal* of the 15th November, 1884, but as he may not have this by him, perhaps in the interest of humanity to the birds you will not object to republish the following extract:—'I had frequently observed the birds to follow a bee, sometimes even close to the hive entrance, seize it, and then settle on the gravel walk and beat it to death against the stones; but I feel sure the bird dare not do this to a *worker-bee*, and that it must be feeding on the stingless drones, and I determined to ascertain this fact beyond the possibility of doubt: so the next time I saw the bird thus occupied I threw a clod of earth at it and made it relinquish its prey; this I did at various times and always with the same result, viz., that, as I expected, the insect was invariably a *drone* and not a worker-bee. Now the time when the flycatchers require these fat drones for their young is after the swarming season is over, and then the workers themselves are turning out and destroying the drones, which are no longer required in the economy of the hive, and therefore the birds are assisting the workers instead of destroying them, and are consequently friends and not enemies to the bee-keeper.'

I feel sure that if Mr. Blankley will repeat my experiment he will easily satisfy himself of the truth of the above, and it would be a pity to have such useful birds as Gilbert White's 'most mute and most familiar little friends, the spotted flycatchers,' destroyed through a misapprehension.—A. B. Herbert, *Edinburgh, July* 30.

THE COTONEASTER.

[501.] I don't know whether bee-keepers are aware of the fondness of the bees for the shrub *cotoneaster*. Here, at mine and my neighbour's garden, there are hedges of it, and in June its thousands of little white flowers are crowded with bees. I live in the midst of miles of heather and blackberries, but on no plant, not even the latter, have I seen such quantities of bees. I am not aware whether its flavour is beneficial to the honey or not.—T. H. Morgan, *Wansleigh, Budleigh Salterton, Devon.*

STRANGE SITUATION OF A WASP'S NEST.

[502.] Several instances of wasps' nests built in very peculiar places have lately been recorded in the columns of the *B. B. J.* But I think one in this neighbourhood is constructed in the strangest position of any I have yet seen reported.

In the kitchen-garden of Longden House, the residence of H. Davies, Esq., is a small pollarded willow, where a pair of wrens built a nest, in which three eggs have been laid. Of this nest the wasps have taken possession and have driven out the birds. The gardener, Mr. T. Shuker, has removed the front of the nest and so exposed to view the dwelling of the wasps, extending from the roof to the eggs below.—J. P., *Wrockwardine, Salop.*

EXHIBITING TWICE IN SAME CLASS.

[503.] I see in the rather humorous account given of the Stafford County Bee-keepers' Show (held at Wolverhampton on the 21st of July and two following days) by Mr. G. Walker of Wimbledon, that he objects to the rules of the Association allowing one exhibitor to show more than one exhibit in same class, perhaps he would not have objected to my showing two exhibits in the same class if both had been unworthy of notice. All exhibitors have the same chance (of trying). Each exhibit has to pay its entrance fee. In looking over the list of entries at the Shropshire and West Midland Agricultural Show held at the same time and place, we find in many places where the same exhibitor enters as many as four exhibits in the same class. The farmer has cattle of different qualities, and does not know which quality the judge may place first, so he enters more than one. So it was with my honey. I did not know but some of my brother (or sister) bee-keepers would have honey at the show far superior to mine, and from what I had heard I did not think I stood so good a chance; and I must own I was agreeably surprised when I found I had won 1st and 2nd prize and the Society's silver and bronze medals for extracted honey. I may say that at our show last year at Tamworth double entries were made for honey, but as the exhibitor did not gain a prize, nothing was thought of the matter, and as our honey produce varies from year to year I cannot see why this no rule should deter any one from exhibiting, for it was this very thing that pricked me on to double entry at the Wolverhampton show; and if my gaining the honours should act on the disappointed exhibitors as it would on me, had I been in the background, it will stimulate them to renewed energy in striving to be foremost at the next county show.—Elihu Clowes, *Blackbrook, July* 30.

BEES IN TEXAS.

[504.] Enclosed I send you an extract from a letter which I received a few weeks ago from my son, who went to Texas last October. I think, perhaps, it would be interesting to some of your readers:—

'You ask me if there are many bees in this part of the country. There are lots of wild ones all around, and last week I found a bee tree, with the largest quantity of comb I ever saw, if I had left them a few weeks longer, I should have got plenty of honey, but as I was offered $1½ for the bees if I could bring them home alive, I would not leave them, so I took them and

brought them home in a sack. I had neither vail or gloves, and did not get stung. The wild bees never sting like those near the house. Mr. H. has ten stocks, and now they are domesticated, they sting you if you meddle with them. When I got home I shook the bees on to a cloth in front of the hive, and then saw the queen (they call her a *king* in this country, just to be different from us), so I caught her and put her in the box, and the others soon followed, they have been in a week and are doing well. The bees have been swarming here, they began early in April. I hope yours will do well this year.

'We have the most lovely flowers growing here, and the arbutus and other beautiful shrubs are as common as blackthorn is with you. I shall save all the flower seeds that I can and send you.'

I send this little account of the bees in Texas, as it seems strange that the wild ones should be the most gentle. I find from your *Journal* that the Texans have a very ancient authority for calling the ruler of the hive a king.

My son is living near Boerne, Kendall Co., he is very happy there, and likes the country much.—H. Ellis Booth.

NO GAIN.

[505.] May I give my experience? and would you kindly give an advice? In the autumn I bought a stock in a straw skep, put them in a corner of the garden, and the wasps visited them rather freely. I shifted them to another corner, which some of them refused to find out. Another stock was bought, and the two placed closely together, to keep one another company, under my window. The first colony, probably thinking their lives were drawing to an end, left their home and went, no one knows where, to die, so that there were not half-a-dozen left in the spring, dead or alive, though a good bit of honey was in the combs, which those next door enjoyed. There are holes in the walls about, nicely lined with cobweb; some went there to breathe their last, but where went the many? The second stock swarmed on the 22nd of May, and clustered on the rhubarb, and we put them in Messrs. Abbott's Copyable hive with ten frames, some with starters and some with whole sheets of foundation. Some six weeks after I put a Benthall crate of sections on, but they have not yet entered it. I got another hive ready, expecting a second swarm, or a cast, and on the 1st of June some strangers came, and went straight into this new hive, and quite covered nine frames. These must have come from the roof of a lady's house not far off, where a stock has been at work for years undisturbed. Supposing my skep to have sent out a cast at the same time, would the cast join the strangers in the bustle? I put three frames of sections at the back of these, with zinc excluder, and now the bees are drawing out the combs in the first frame. The weather being so unfavourable, would it be advisable to take off the sections? They have cost over 3*l*. Can I expect any honey from the frames or the sections this year? and would it be advisable to drive my stock from the skep into a bar-frame hive? I have noticed some very tiny white insects moving about on the frames; perhaps that is of no consequence. Would it be a mistake to cover the frames partly or wholly with a pane of glass? The roof of my home-made hive is made of thin sheets of iron. That, also, is of no consequence, perhaps?

Stings.—When a bee stings me and leaves the sting, I take it out carefully, apply the blue-bag, and I feel no more of it: but when it just touches the skin with the sting, and I shake it off at once, or when it touches it through a glove, then, in about twelve hours, it is dreadful, and my wife says she is going to sell the bees, for it frightens her to see me with hand and arm twice their usual size, unable to sleep or do my work. Once, I fancy (for I did not feel it for about twelve hours) I was touched through the shirt-sleeve with the same result. I am fond of the bees, and treat them kindly, but it seems they have a trick of serving me worse than others.—H. R. R.

[Your first stock was destroyed by wasps because it probably queenless, or its population very small. You acted foolishly in removing it to another part of your garden, since by that act all the adult and flying bees were lost, and the young bees left in the hive, unable to defend themselves, were destroyed by robber-bees from your other hive. As to your second hive throwing a cast, which joined the vagrant swarm, it is possible, but not likely. Remove your super, as it is too late for the bees to work in it this season, and if the outside combs in the hive are well filled with sealed honey, you may extract from two or three combs, and return them to the hive. Your bees and their combs may be transferred from the skep to a frame-hive. Iron is very bad material for a hive cover, since it draws the heat too much. Wood is the best. Do not place glass over the frames of your hive. It is the worst material of all for a winter covering, but will do no harm during the summer, if you keep it covered with thick woollen material, and place a board over it. Wear no gloves, but a veil, and cover your wrists with elastic stockings, and you will receive very few stings if you work *quietly* with your bees, and avoid shaking or jarring the hives.—Ed.]

TAKING A SWARM FROM AN OLD TREE.

[506.] On Wednesday, July 21st, a swarm of bees took up their quarters in the base of a partly decayed trunk of an old tree, near Nunthorpe Station. We determined to dislodge them from their retreat. The part of the base where the bees were located was conoidal in form. We bored a hole just under the flight-hole and then tried to expel them, but in vain. Several perforations were now made in other parts of the base, but without any success. As a last resource we penetrated downwards through the centre of the conoid, and were rewarded by hearing the lively buzzing of the swarm. We closed all the holes but the last made one, and then commenced to smoke them (the bees). We soon shifted our little friends now. They mounted up into the skep, but many clung to the outside of it. Before we had time to finally drive them in, a most dreadful thunder-storm came on. The rain fell in torrents, and hundreds of bees were drowned. We covered them up and left them till next day (Thursday) at 11.30; when we found that they had all ascended. At 8.30 the queen was found to be present. They were removed on Friday morning and placed on a permanent stand at 7 o'clock. Although they were disturbed for thirty-five hours yet no bad temper was exhibited. They now seem to be going on all right. No gloves or veils were used.—An Ormesby Bee-keeper.

FLOWERS—FINISH OF SECTIONS—JUDGING.

[507.] Not alone in North Cornwall, with 'J. L.,' do bees love the blossoms of the raspberry. Here in the South, after the rain had settled the currants, there was up and down among the canes a sight to see and a sound to hear. I suppose there can be no doubt that this is a bad season for honey, though the bees certainly did their very best at the end of June and the beginning of July. But there have been several complaints of the imperfect finish of sections, and the same condition prevails among those produced here. My idea is that it is due to the very fact of the bees being so numerous. They seem to have rushed impetuously into the sections when the honey-glut came, and to have knocked up a lot of slop-work—a kind of 'jerry-building,'—not caring to spend time in filling the extreme cells, which they could only get to one side of, but expecting to find, as they wanted

it, more space in which to store roughly their gatherings. The tiering took place just as the weather changed, and so I find in some cases the work more properly completed. 'You might have left your sections on longer,' some will say. True, but it happened that there was some very dirty pollen being gathered, and footmarks were unusually conspicuous. I think the same crowding of bees accounts for the numerous and large pop-spaces—you can no longer call them holes. There would have been a great waste of time in struggling through apertures of the ordinary size.

As to the surface of sections, we know that in supers as well as in the body hive, on a sudden large supply of nectar being produced after a few days of moderate influx, the unfilled cells are suddenly extended to the very utmost of their capacity, allowing the least possible passage for bees. Last week I thought I noticed this in a section or two, but half-a-dozen in succession show the same condition with a similar pattern in their central portions, and it is clear that on the guide-foundation the cells are shorter than elsewhere, and the surface is smoother. If then we filled our sections with foundation, while we should have more midrib, we should get a better face. I do not know whether this has been noticed before.

'J. L.' asks for opinions as to exhibitors being allowed to take first and second prizes in the same class, as was the case at St. Austell. I can tell him that the point was mentioned there, but as the secretary had accepted the entries, the judge had only to deal with them. The rule which admits of the result objected to is certainly a common one and prevails at agricultural shows, yet I am inclined to agree with 'J. L.' and Dr. Walker that it would be as well to alter it for honey exhibitions. In the case of cattle there are more—and more doubtful and more important—points for expert judges to decide on; and an exhibitor may not be able to satisfy *himself* as to which of his two animals is the best, and may therefore send both and get first and second prizes; but in the case of honey I do not quite like an exhibitor staging two lots so exactly alike that if one gets first prize, the other must get second, or an equal first; but I think it would be more satisfactory if each exhibitor sent only the one lot which he thought was his best. Verily, any one who thinks bee-keeping and its adjuncts to be the simplest and lightest possible amusement may read Dr. Walker's contribution on the Wolverhampton Show with much profit. Well if the Doctor did not experience, besides his hard day's work, the additional worry of a public insult in the show-tent from an unsuccessful exhibitor.—C. R. S., *South Cornwall.*

Selected Query.

[509.] *What is the best method of introducing alien queens to full colonies:—*

(A.) *By caging:* (1) *Kind of cage,* (2) *Best time of year,* (3) *How long after removal of original queen,* (4) *Length of imprisonment,* (5) *Mode of release,* (6) *Formation of queen-cells, &c.,* (7) *Virgin and fertile queens.*

(B.) *By direct introduction:* (1) *By means of smoke, intimidants, or anæsthetics,* (2) *Time of Day.*

Please answer questions also, as above, under (2), (3), *and* 7.

N.B.—The above refers to queens only, without brood or accompanying bees.

Remove queen from the full stock, and at once place alien queen with bees accompanying her on a perforated zinc stage over feed-hole of hive. This zinc stage should have a slide, so that communication can be made between the box and hive without the least disturbance by pressing in this slide. In forty-eight hours, at night, press in slide, and so release queen. By this plan, during the past three years I have rarely lost a queen, and on one occasion introduced thirty-nine out of forty in safety. Sometimes at the end of twenty-four hours, after removing queen, I look through hive to see if queen-cells are started, and if so, I remove them. I never examine stocks to see that queen is safe, as in my hands the method has proved always a success, and to disturb the stock within a day or two of release of queen often causes her to be encased and killed. —Thomas B. Blow.

By caging. (1) A simple tube of perforated zinc, made by wrapping a piece round a core of wood 1″ × ⅜″. Close at each end with a plug of wood. (2) In the summer, when honey is flowing and brood hatching. (3) At the time of removal of deposed queen, push the cage containing the new one between two combs. (4) Forty-eight hours. (5) Lift out one of the frames between which the cage has been, remove the plug from the cage, and let the queen run out. Watch how she is received, and if unkindly, recage her for twenty-four hours. (6) Any queen-cells commenced will be destroyed on release of the queen. (7) Should not introduce a virgin queen to a colony.—F. Lyon.

A. (1) Do not use one, but should say either Mr. Cheshire's or the 'Raynor.' (2) The working season. (3), (4) The operator must determine as to the condition or temper of the colony by caging, there is no given time. (5) By Mr. Cheshire's plan the queen is released by the bees without further disturbance; by Mr. Raynor's cage the operator does it himself in like manner. (6) The formation of queen-cells has no bearing whatever upon the manner in which a queen is received, but they should be destroyed if the bees do not remove them after accepting queen. (7) For caging the same rules apply to both.

B. (1) Neither are necessary as here implied. The fact is they are quite unnecessary and injurious. Keep queen *alone* and *without food* for thirty minutes; let her run under quilt after the slight puff of smoke. Also confine a nucleus, and let queen run in when bees are in commotion. (2) Evening. In latter case, keep confined three days and liberate on permanent stand at evening. (2) Any time of year. (3) Same evening. (7) Applicable to both.—S. Simmins.

The best and safest method of introducing alien queens to full colonies is to remove the old queen in the middle of the day, then put the new queen with seven workers in one of 'Carr's improved long queen Cages' (as originally invented, see illustration *British Bee-keepers' Journal*, Vol. 1., April, 1874, page 188. This queen-cage was awarded a medal at the British Bee-keepers' Association Show at the Crystal Palace in September, 1875,—the only medal ever awarded by the Association for a queen-cage, and no cage has ever been invented to supersede it.) The cage with the queen is then pushed down the feed-hole in the cover or quilt, between the combs. At dusk the night but one after, the bottom door is quietly opened by pushing the wire down, and the queen at her leisure quietly walks out of the cage without any disturbance. I have successfully united scores of Ligurian queens with this cage at nearly all times in the year.—William Carr, *The Hollies, Newton Heath, near Manchester.*

A. *By Caging.*—1. I use a pipe-cover cage, of the same pattern as the one used by the late Mr. Woodbury, of German manufacture, but twice as large as the Woodbury —in diameter 1¼ inches—made by hand, of open wirework, through which the bees can feed, and communicate freely with the imprisoned queen. 2. From May to September, that is during the months of the honey flow. 3. Immediately. Exchanging one queen for the other. 4. Twenty-four hours, if the bees seem well disposed, but if not I wait another period of twenty-four hours, until the bees receive the queen, watching her carefully, after setting her free, and if encased caging her again. 5. The pipe-cover cage having been screwed into the comb as far as the mid-rib, and secured by a large pin; withdrawing the latter the cage is raised on one side, and the queen allowed to walk out on the comb. 6. If queen-cells are formed the queen is kept under confinement, and all cells are cut out, as quickly as formed, until the frenzy of the bees has subsided, when the queen is liberated, and watched. Bees will rarely receive an alien queen during the formation, or existence, of queen-cells in the hive. This, at least, is my experience. 7. The above method is applied to *fertile*

queens only. I have also successfully introduced numerous queens by means of the cage which bears my name, but prefer to witness the manner in which the bees receive the queen, when set free, which cannot be done with this cage.

B. *By Direct Introduction.*—1. During the honey season I have successfully introduced, by smoking the alien queen in at the entrance of the hive; also, by using a little chloroform on cotton-wool in the barrel of the smoker, in lieu of smoke, but this must be applied very sparingly. Also by warming a little honey in a teacup, dropping the queen into it, and then allowing her to run in at the feeding hole. In spring and autumn I have introduced many queens to bees while stupified by puff-ball (*lycoperdon*), but consider caging, as described above, the safest plan, since, by a careful use of it, a queen should never be lost. 2. Always at evening, except when using puff-ball; then morning or midday, on a fine day, is preferable.

2. If by stupifying the bees, the best time of year is spring or autumn, when almost all the honey cells are sealed over. Puff-ball must never be used during the income of honey. 3. Immediately. Some introduce successfully, by keeping the colony queenless four or five days, and, after cutting out all queen-cells, allow the queen to run in at the entrance, or feeding-hole, or even place her upon a comb amongst the bees. 7. I always smoke virgin queens in at the entrance, as soon as possible after they are hatched, and have rarely lost one. The bees seem to pay little attention to virgin queens. I never cage them.

One precaution seems to me important, viz., that the queen should be caged between sealed brood and sealed honey-cells, the cage covering several of the latter, so that the queen can feed from the broken cells caused by pressing in the cage. I also prefer to cage, with the queen, several attendant worker-bees. This is Mr. Benton's plan (and he always uses a cage similar to a pipe-cover cage), and has never failed with me. He invariably and confidently recommends this method to all purchasers of his queens. The improved Woodbury cage, described above, will take half-a-dozen workers with the queen, but three or four are sufficient. These attendants form a small bodyguard, and afford additional protection to the queen, whom they feed and cover.—George Raynor.

The easiest, safest, and most satisfactory method of introducing an alien queen in the hands of novice or expert I consider to be caging. My replies are as follows: (1) Pipe-cover queen-cage. (2) The best time for introducing depends very much upon the locality; but it should be in May, June, or July, when the stock is strong and bees are hatching in large quantites daily. (3) The removal of one and the introduction of the other at the same time has always been my practice. (4) Twenty-four hours from noon, or about 6 p.m. (5) Proceed as in ordinary manipulation of stock, and having quietly removed the cage, the manner of the bees to the strange queen is noticed, and if unfavourably received a further imprisonment of twenty-four hours takes place.—C. N. White.

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[479.] *Bees Fighting.*—In reply to the letter of 'A Kentish Bee-keeper,' I should say that from his description there is every appearance that in the case of number one and two hives all (or nearly all) the honey was extracted, and the bees not being able to get any next day, were consequently starving, and had not honey (or some substitute) been obtainable on July 1st, they would have been no more. I suspect cases of starvation have not been rare this summer. The symptons are—the bees crawling feebly away from the hive to die, and if the hive be opened the bees will be found in such a weak condition that hardly any are able to fly, and dead ones will be found on the floor-board. The prevention of further loss is to pour warm syrup in between the frames from the top.

N.B.—Don't wait for the bees to show their gratitude, which, if you give them the opportunity, they will soon do in an unpleasantly lively manner.—A. T. Wilmot.

[490.] *Carbolic Acid Fumigation.* (West Cornwall.)—Carbolic acid would have same effect on bees as smoke in instance you name, but the less smoke, &c., used in driving the better.—G. H. G.

[491.] *Uniting.* (West Cornwall.)—In uniting the bees from several skeps when driving it is only necessary to drive each stock into a separate skep, and then empty the number you wish into one skep. The bees all being gorged with honey and in a frightened state, unite without any signs of fighting. If you don't require any surplus queens leave the bees to settle which shall reign over them. The deposed queens are generally to be found dead under the flight-board the following morning.—G. H. G.

[492.] *Four Colonies from Two.* (Honeysuckle.)—Would it be wise to divide a small colony of ten frames so late in the season? I think not, unless you are in a very good district among the heather, &c. In any case I should not divide until I had queen-cells nearly matured to insert, and, therefore, only divide one stock now and the other in a fortnight's time. It would be well also to see there are plenty of drones in the two hives, as it will be during the next week or two '*the lazy fathers of the hive*' will meet their death.—G. H. G.

[493.] *Waste Wax.* (Honeysuckle.)—No.—G. H. G.

[494.] *Comb from Syrup.* (Honeysuckle.)—Not by any means is my experience, and I have always found combs built from syrup is much weaker in strength and also of a lighter colour.—G. H. G.

Queries.

Queries and Answers are inserted free of charge to Correspondents When more than one query is sent, each should be on a separate piece of paper.

Our readers will greatly oblige us by answering, as far as their knowledge and observations permit, the Correspondents who seek assistance. Answers should always bear the number and title placed against the query replied to. Any queries unanswered in this way will be answered by the Editor and others.

[510.] *Feeding.*—(1.) When should feeding for winter be commenced and finished? (2) and to promote breeding? Presuming a good supply of store, is it necessary to feed for breeding, or can the honey be uncapped?—Theta.

[511.] *Sections.*—I have three swarms of this year. On two of them are sectional supers. One had sections filled with comb from last year, the other was fitted with foundation. Very little has been done in the first, only a few bees being visible there, and the other has been persistently refused. Should they be removed, and when?—Theta.

[512.] *Wintering.*—Last year I tried Mr. Cheshire's recommendation, to cover the tops of the frames with frail, and put on an empty case filled with chaff. It was a dismal failure every time, all my bees died. Am I safe in leaving the American cloth on the frames? Should the hive body be reduced, and if so to what number of frames? Is it *absolutely* necessary to cut winter passages? Is it necessary to fill up the spaces at the sides? I was of opinion that air being a bad conductor, was sufficient.—Theta.

Echoes from the Hives.

Weston, Leamington, July 23rd.—The last few days have been middling for honey-gathering, though there is a great quantity of white clover, but it is too cool now and showery, though the honey flow has been of short duration. I am fairly satisfied with what I have got and about to take.—John Walton.

County Wexford, July 19th.—Alas! our hopes of a grand honey season are doomed to disappointment. Weather splendid for about ten days up to July 9th, since then dull rainy weather; bees able to get out but very little, honey comes in very slow, supers not filling, bees require all they are able to collect between showers to keep them going. I. B. K. A. have had to postpone shipment of members' honey as it would not be ready for date fixed. Prices ought to advance this season.

NOTICES TO CORRESPONDENTS & INQUIRERS.

R. A. C.—The bees sent were well-marked Ligurians.

A North Country Bee-keeper.—*Doubling.*—The distance between the top of the frames and the bottom of the frames above should be a quarter of an inch. Both hives should have the frames ranged in the same direction; we prefer them being placed parallel to the sides.

Col.—The queen, with one worker, and without food, arrived dead. She had, however, been dead so short a time that the case is clear. Her body was simply crowded with bacilli alvei. No mention is made by the querist of disease in the stock, but judging from the queen's condition I take it that the colony is certainly infected. If I am here supposed to be incorrect a small piece of brood comb from the stock in question would confer a favour. It would surprise bee-keepers immensely could they see, as I have frequently the opportunity of doing, the marvellous vitality of queens proved by their continuing not only to live, but actually to lay, when their bodies are riddled by micro-organisms.—F. Cheshire.

Inquirer.—Queen dead and body partly decomposed. Determination impossible. The body, beside containing millions of putrefactive micrococci, presents also abundance of the curious torula form which I have many times before observed, and which has a distinct character of growth. It is probably identical with the organism observed by Lichtheim, and which he called *mucor mucedo pyogenes*. Possibly an interesting and instructive case is lost through the death of the queen, and yet nothing is easier than to send queens safely through the post. In an ordinary tin vesta match-box, the smaller the better, a queen, with four or five workers, will travel quite safely for twenty-four hours. A little food is an advantage, but if added it must not be allowed to daub the bees.—F. C.

T. T.—The queen is a black, and rather more than one year old.

E. T. C.—*Drones.*—You did not do very wrong to trap the drones, but you might have saved yourself the trouble; the workers would have soon turned them out.

R. C.—1. *Late Breeding.*—If you feed your bees gently they will certainly keep on breeding. But notice the term 'gently.' If you feed rapidly, the food will crowd out the queen, and the end will be defeated. This is probably why you say your bees 'won't breed.' 2. *Place to stand Bees.*—There is no objection to the land between the two brooks if they are not liable to flood. 3. *Queens.*—The mildest-tempered bees are Carniolan, but they are not so good for honey-gathering as Ligurians. Introduce them without delay, while breeding is going on.

E. K.—*Bees hanging out and then returning.*—The heat may have caused them to hang out, and the cool weather to re-enter, or they may have swarmed without your knowledge. They are no doubt all right.

Miss M. E. M.—1. *Tiering up.*—There should be exactly ¼ inch between the top bars of the lower hive and the bottom bars of the upper one, and the frames in the upper hive should be directly over those in the lower one. 2. *Skep hanging out, although not working in the Supers.*—The hole in the top of the skep is too small, and is additionally reduced by excluder-zinc. 3. *Frame Hive.*—If honey is still coming in you can remove the outside full frames and give empty frames in the centre.

A Staffordshire Bee-keeper.—1. By driving the bees into the skep fitted with foundation you would be enabled to take the honey, but it would be necessary to make provision for the brood that might be present, and to feed them up to the required weight for the winter. This should be done as soon as the honey season closes in your district. 2. At the end of the season you might extract the honey from your bar-frame hives. Syrup feeding would suffice for the bees. Twenty-five pounds of sealed stores would be sufficient to carry them through the winter. Too much pains cannot be taken in preparation for the winter. Bees well wintered are ready in spring for a good summer's labour.

'*Useful Hints*' *will be given in next number.*

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

July 30-August 5.—Great National Show at South Kensington. Secretary, J. Huckle, Kings Langley.

August 12.—Taunton Flower Show. Entries close August 9th. Hon. Secretary, E. S. Hammond, 67 High Street, Taunton.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

Aug. 18.—Farnborough.

STAFFORDSHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

August 5.—Darlaston Floral Fête.

August 9.—Gnosall Fête and Honey Show.

August 17, 18.—Bilston Flower Show.

August 19.—Brenwood Flower Show.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' *whose orders amount to Five Pounds per annum, will be inserted Free.*

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

THE BRITISH BEE JOURNAL

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

It is proposed to hold an examination for third-class candidates desirous of gaining certificates of proficiency in bee-keeping in the neighbourhood of Liverpool on Saturday, August 28th. Application to be made to Mr. W. Lees McClure, The Lathoms, Prescot; or to the Secretary, J. Huckle, Kings Langley, Herts.

ASSOCIATIONS AND THE PRODUCTION OF HONEY.

In the course of the last few weeks we have been privileged to record the meetings of some of our largest shows, each of them bearing testimony to the increased enthusiasm which has been evoked in behalf of the advance of bee-keeping in the district in which it has been held. The Liverpool and the Portsmouth Shows proved great successes; but their glory has in a great measure been eclipsed by the Norwich, that held at the Indian and Colonial Exhibition, and, lastly, the very interesting Show held at Southampton.

The Norwich will long be borne in remembrance by the great interest taken by the Prince and Princess of Wales and their family in the various exhibits, and in the produce of the honey-bee. That held at the 'Colinderies' will be famous for the extent and variety of the exhibits, for the amount and arrangement of the honey trophies, for the emulation shown by the purveyors of bee-appliances and the producers of honey, and for the large numbers who were spectators of its contents. In Classes 2, 3, 5, 6, the weight of honey exhibited amounted to nearly 4000 lbs., about two tons. A large amount of honey met with a ready sale. We cannot speak too highly of all the assistance readily and freely granted to the B. B. K. A. by Sir Philip Cunliffe Owen and the other officials; also the best thanks of the Association are due to the Royal Horticultural Society for the great facilities afforded, which enabled them to make the exhibition so great a success.

The last we have to chronicle is the Hants and Isle of Wight Show, an ample report of which will be found in this issue,—which in the town in which it has been held has created an amount of popular enthusiasm beyond that of any previous Show. We have seen places decked with flaunting flags and waving banners, and the inhabitants all alive to the prospect of a happy holiday, but in the Southampton Show there was a completeness and an effectiveness in the arrangements that we have never before read of, or, we may say, conceived.

Generally speaking, the bee-keepers' show is an adjunct tacked on to some larger agricultural society or horticultural association; but in the Southampton Show, Mr. Bellairs, the Hon. Secretary to the Hants Society, had no disposition that his Association should hold any minor position, or be placed in the background, but has kept it prominently before the public and marched abreast with that with which it was conjoined. We were delighted to read of the gracious deportment of H.R.H. the Princess Beatrice, her triumphal procession through the gaily-bedecked streets, the enthusiastic reception of the Royal party, the bee-hive *arc de triomphe* under which they passed, the loyal addresses, and the Princess's kindly acknowledgments of the same. We also have been pleased to note the large number of exhibits and exhibitors, and the value of the prizes that were offered at the bee-show; and we have to congratulate Mr. Bellairs and his coadjutor, Rev. Walter Medlicott, for the very complete and thorough character of the Show. Never in a similar degree has bee-keeping been brought so prominently before the inhabitants of any town; and we trust that the Committee of the Hants B. K. A. may be rewarded for their pains by witnessing the prosperity and progress of their Society, and by feeling that they have created such an enthusiasm that the object of bee-keeping will take a still deeper and stronger hold of the hearts of the inhabitants of Hampshire and the Isle of Wight.

But now that these shows are things of the past,—now that the pomp and the circumstance are over,—now that we have once more returned to the 'cool, sequestered shade' of daily life, we are brought to the consideration of the object of the institution of Associations, which is, the production and sale of honey so that the labourer and the artizan may be benefited thereby. The exhibition at the 'Colinderies' was in a great degree to prove to the world the capabilities of the United Kingdom to produce honey sufficient to satisfy all the demands

of its inhabitants. But the foreigner is keenly alive to the fact that honey is increasing in demand in this country, and he is solicitous to enter the market with his superfluity, and to contend with the natives for the supply. Even in this number we see that the amount of honey imported from abroad in the month of July was 6505*l.*, which we might reckon to be the value of 200 tons. The honey merchants and the honey companies have, then, an arduous task before them,—a difficult problem to solve, viz., to create such a market for the sale of the product of their own country, and at the same time to compete successfully with the foreign producer.

The utility of pure honey, the benefits to be derived from its use as an article of diet; the varied forms in which it can be applied in confectionery, beverages, and medicine; its advantages to the old, and its nourishing powers to the young, should be widely promulgated, so that all the honey that is, or can be, produced, may be profitably utilised.

THE CONFERENCE.

(*Saturday, July 31st.*)

SECOND PAPER.

Mr. Henderson read the following paper on 'Queen Introduction' by the Rev. G. Raynor, M.A. Owing to domestic affliction, the latter gentleman was not able to be present.

QUEEN INTRODUCTION.

BY THE REV. G. RAYNOR, M.A.

The subject of queen introduction, in its various forms, is so extensive, and the opinions of skilful, practical apiarists differ so widely in regard to the success of the numerous methods employed, that, in addressing to you a few remarks thereupon, I feel that I am treading upon somewhat dangerous ground, and, in briefly referring to the several plans in general use both in this and other countries, I will be careful to recommend those only which have proved most successful in my own practice.

Most practical apiarists will, I think, allow that upon the condition of the colony which is to receive the alien queen, as well as upon the animus displayed by the queen, very much depends.

We all know that when our bees are in the midst of gathering in a plentiful harvest, in other words, when all goes well and prospers, and the future as well as the present looks bright and cheerful, with no heavy clouds of depression brooding over them—as with men so with bees—all feeling of irascibility is laid aside, and universal benevolence reigns supreme; in short, under such happy circumstances, irritability disappears, and the sting remains in its sheath.

The summer months then, when honey is briskly coming in, are the best time for changing and introducing queens. All queens, and especially virgin queens, can be more safely introduced when the bees are storing honey than at any other time. But it is often more convenient to the apiarist to introduce his queens in the spring or autumn, that is to say, in a time of dearth. Taking, then, a leaf from the book of nature, at such times we should feed our bees—feed them continuously, for a day or two before removing their queen, during the time of introduction and after liberating the alien—and feed them from the top of the hive, since top-feeding is least conducive to robbing, and produces the least excitement or confusion in the hive, a state against which it is most important to guard.

The subject may be treated under the two heads of—

I. DIRECT INTRODUCTION. II. INTRODUCTION BY CAGE.

I. *Direct Introduction.*—By which I understand the introduction of a queen, unaccompanied by attendant bees, since to me it appears that the insertion of a comb, or combs, containing hatching bees, brood, and a queen, appertains rather to uniting than to direct introduction, although, in a certain sense, the introduction is direct. In the practice of this system, as a rule, I may remark in passing that I have not been very successful, although I can well believe that in the hands of others it may have proved more of a success. As we all know much will depend upon conditions, time, and other things. If the colony consists chiefly of young bees, with hatching brood, the plan generally succeeds. About midday on a fine summer's day, when the honey flow is abundant, we may safely interchange simultaneously a couple of brood frames, with queen, in any two colonies, without the loss of queens or workers. The operation consists of simply removing the two frames, from each hive, to a frame-box,—taking care that the queen is inside between the frames—carrying them carefully to, and inserting them in, the other hive. This I have repeatedly practised, mostly as an experiment. But I do not consider this, strictly speaking, queen introduction, and, tried under any other conditions than those named, the plan with me has proved a failure.

The methods of direct introduction, pure and simple, by which I have generally succeeded, are: 1. By immersing the queen in honey; 2. By dispossessing the bees of their combs; 3. By smoking in at the entrance; and 4. By puff-ball (*lycoperdon*), and by chloroform.

Firstly, then, *By immersing the Queen in Honey.* On removing the queen from the hive, to make room for the alien, I am very careful to avoid arousing the bees. Since skilful, quiet manipulation is a most important factor in all systems of introduction, it is well on finding the queen to slip a pipe-cover cage over her, and to close the hive for an hour or two, noting the frame on which she is caged. On reopening the caged queen is removed from the hive, the hive is carefully closed, and the alien queen, having been first immersed in warm liquid honey, is taken up in a teaspoon and placed inside the central feeding-hole, which is immediately closed. The hive is not opened again for two or three days, unless any unusual commotion, betokening an encasement, is noticed at the entrance. I have rarely lost a queen by this process

Secondly. *By dispossessing the Bees of their Combs.* In their normal condition bees will always show fight on the introduction of strange bees to a well-stocked hive, whether by the entrance or otherwise. But deprive the same bees of their possessions—combs, brood, and honey—and they will unite with any others presented to them without a struggle. In the case of colonies therefore, in fixed-comb hives, such as skeps, the bees are driven out by the ordinary method, and their queen is removed. By driving the bees are thoroughly subdued, and all the fight is taken out of them. The hive from which they were driven is now placed upon a board, or cloth, and raised in front, and the bees are shaken upon the board. As they run into the hive the alien queen (with accompanying bees if any) is dropped into their midst, and all joyfully enter together.

I have experimented, on this plan, with many hundreds of colonies—condemned bees and others—and I can truthfully assert that it has never failed in a single instance. The same method is easy of application to colonies in frame-hives by removing their queen, and shaking or brushing the bees from their combs, and allowing them to run into an empty skep placed on the stand of their hive. The combs are returned, the frame-hive takes the place of the skep, out of which the bees are shaken, as before, and the new queen is dropped amongst them as they run into their former abode. Neither syrup nor scent is used, as I have found them quite unnecessary, and the operation is performed in a more cleanly manner without either, there being, moreover, less danger of attracting robber bees. The method may be practised at any time, indeed I have introduced queens thus in mid-winter by removing the hive into a warm room. In spring or autumn, morning and evening are the best times, when all the bees are at home, and there is no danger of inciting to robbing.

Thirdly. *By Smoking in at the entrance.* During the honey season many apiarists introduce their queens direct, whether virgin or fecundated, by driving them in at the entrance of the hive by smoke. The smoke of tobacco, which has a partially stupefying effect upon the bees, is usually recommended. The time selected is the evening of a fine summer's day, when the bees, pleased with their bountiful income, are in the best of tempers. The queen of the hive

is removed with as little disturbance as possible, the hive is closed, and sufficient smoke is injected at the entrance to partially stupefy the bees. The alien queen is then placed within the entrance, and driven into the hive by a few puffs of smoke. This method has generally been successful with me. Professor Hasbruck, an American authority, makes the following statement:—'It is surprising to one who has never tried it, with what care and success queens of all kinds, virgin as well as fertile, can be smoked into the entrances of hives at twilight. Bees are not on the look-out for strangers at this time of day, and they are ready to accept anything put into their hives, especially if the smell of all is made alike with a little smoke. I have not caged a queen of any kind for the last two years, and I have scarcely lost one in this time in introducing them at the entrance, and I have not found it necessary to resort to tobacco-smoke either, as Mr. Alley recommends.'

If tobacco-smoke can be dispensed with, it is certainly an advantage, as I have a strong objection to stupefying bees in the honey-season, believing it to be, not only injurious, but dangerous to the lives of the bees. Whenever anæsthetics are used, *during the honey season*, the dose should be so small as to *quiet* the bees only, not large enough even to produce partial coma or stupefaction.

Fourthly. *By Puff-ball and by Chloroform.* I will add here a very simple method of introduction by means of puff-ball, well suited to timid persons, which may be practised in spring and autumn, and which I have always found successful as applied to colonies in skeps. The bees are first of all fumigated to complete stupefaction, and while in this state removed from the hive and placed in an empty skep, the queen being picked out and reserved. The sleeping bees are carried in the skep to the distance of a few yards from their old hive and location, and the skep is set down bottom upwards, the bees being sheltered from the sun's rays, but in no way confined. The combs of their old hive are cleared of any few remaining bees, the new queen and her attendants are put in possession, and the hive placed upon its old stand. As the bees recover from their sleep they fly back to their old abode, and, being thoroughly subdued by the treatment they have received, and rejoiced to find again their old home, with wings vibrating with pleasure, accept the new queen. This plan must be practised during fine weather only, in the early part of the day, before the bees are flying freely, and when there is no fear of robbing or of the bees being chilled. A free circulation of air around the sleeping bees soon restores them to life, and in half an hour or less, they will all have returned to their hive.

A partial stupefaction by chloroform, as a means of queen-introduction, has of late been successfully practised by Mr. D. A. Jones, the eminent Canadian apiarist, who, in conjunction with Mr. Frank Benton, established the apiaries in Cyprus and Syria for breeding and exporting queens of those races. The process, by which Mr. Jones claims to have introduced fifty queens in fifty minutes, he thus explains: 'I take an ordinary bee-smoker with a straight barrel, or fuel-box. Tapering smokers, such as Clark's, would not be as good, as there would be more difficulty in fitting the sponges. I then get three sponges that fit moderately tight to the inside of the barrel when pushed in. Then press one sponge into the bottom of the barrel; damp the second sponge with one teaspoonful of chloroform, and put it in next; then put the third sponge on the top. You then have the sponge filled with chloroform between the two dry ones. Adjust the nozzle of the smoker and you are ready for operations. Proceed to your queenless colonies and puff in the chloroform at the entrance, the same as you would smoke them, for, say, a quarter of a minute; then proceed to the next, and so on, for, say, about two minutes; return to the first hive again, and give them a few more puffs with your chloroform smoker, and let your queen run in. Do this until you have gone over all those you first puffed. Thus the bees in each hive have had about two minutes in which to get sleepy before the queen is introduced. Now, if this is in the middle of the day, and the bees are returning from the fields, I return to the first hive after, say, two minutes, and give them a third dose, as the returning bees require a little sniff to keep them quiet. I have the past season taken the worst cases of fertile workers, and the most difficult queenless colonies that I ever had to deal with, and I never missed yet. Now, why does it work, or why use it? Simply because there is a principle governing the introduction of queens, namely, that the bees must be kept quiet and without a desire to kill the queen, and the queen must act as if just hatched—she must be quiet and innocent, and must exhibit no fear. The chloroform is distributed equally into all portions of the hive by this system; and if the entrance is not too large, the chloroform remains some time about the hive and combs, thus keeping the bees in a sort of quiet, sleepy state, and they come out of that condition so gradually that the queen, being in with them, gets enough, so that her movements are satisfactory to the bees and there is no danger of her being balled. We have also been experimenting the last season, and we intend to continue our experiments on introducing queens *during the honey season*, without chloroform and without caging. It can, and has been done, as we have ourselves done it very frequently, but it requires *considerable experience* to know *just the circumstances* under which she will be accepted, and to be able to detect any hostile act of the bees and guard against it in time.'

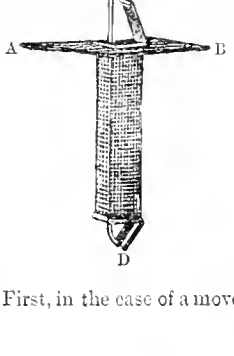
Mr. A. I. Root, the author of that excellent book, *The A B C of Bee Culture*, remarks on Mr. Jones's plan of 'Direct Introduction:' 'It is my impression that one hundred queens may be turned loose at the entrances of one hundred queenless hives without losing more than five per cent on an average, if it is done *during the honey season*, and towards the close of a day that has furnished abundant forage. Where queens are plentiful and apiarians pressed for time, I should recommend this plan of introducing, but it requires, as friend Jones wisely remarks, "*considerable experience* to know *just the circumstances* under which she will be accepted."'

The only other method of direct introduction which demands notice is that which is said to have been originally discovered by Huber, viz., that 'If a colony of bees have no queen, and no means of rearing one, they will invariably accept a fertile queen when presented to them.' This rule requires, of course, an absence of brood and eggs, which seems to be the only stipulated condition, no matter how many or how few, how old or how young, the bees may be, or at what season of the year the introduction is made, it is bound to succeed. To an assertion so utterly absurd I can only say *Credat Judæus*.

If any one wishes to make the experiment, and has no objection to losing his queens, and demoralising his bees, let him deprive a colony of its queen and its combs, and place it upon empty combs, and those containing honey only. Give the bees time to discover the loss of their queen and offer them another at the entrance, or the top of the hive, and she will be at once seized and encased, and either maimed and rendered useless, or killed outright. This, and not a kindly reception, is what invariably takes place, in my experience, and I have tried the method many a time in my earlier days—in those happy days gone by. Colonies which have been long queenless are the least disposed of all others to receive a queen.

II. *Introduction by Cage.*—The cages which I have used most successfully are: 1, The Raynor; 2, Alley's; 3, The Pipe-cover; 4, The Peet; and 5, The Betsinger cages.

Firstly, *By the Raynor Cage.*—This cage, which has been in use some twelve years, and, judging from its extensive sale, has met with general approval, is supplied by most dealers in bee-furniture, and the annexed engraving will explain its use. A B is a square piece of perforated zinc or tin, to a hole in centre of which the body of the cage is fitted, and by which it is suspended through the central orifice in the hive. C is a door opening at the top, and D a similar door at the bottom of the cage. By means of the wire E, the lower door is opened and shut at pleasure. The cage itself is made of fine wire, a far better material than zinc, and permitting freer communication with the queen.



The operation of removing a queen and introducing another in her stead may be thus described: First, in the case of a moveable-comb hive. The queen of the

hive must be secured and the hive closed. The cage, with its lower door closed, is then placed in the hive through the central, or feeding hole, being pushed down between two combs, and the same queen inserted through the upper door, which must be securely closed.

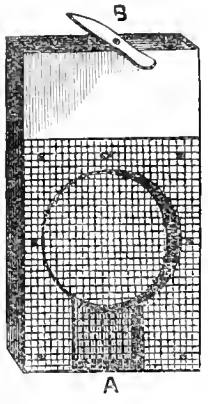
After twelve hours' confinement, a little smoke is given at the entrance of the hive, and the upper door of the cage opened, the queen, disturbed by the smoke, walks out, and is removed. The new queen takes her place, and after twenty-four hours, if there be no excitement apparent amongst the bees at the entrance, the lower door of the cage is opened by pushing down the wire, and the queen is released without the least disturbance of the hive. Secondly, in the case of a skep or fixed-comb hive. Here the only plan is to drive the bees, secure the queen, and proceed as before; when the queen being securely caged in the centre of the skep, the hive placed on a sheet, and wedged up in front, the bees are shaken out in front, and return to their hive. The remaining procedure is precisely the same as in the former case of the moveable-comb hive. Where the latter is used, an inspection is advised a few hours after setting free the queen; but if this be done at night, the following morning is soon enough to examine. The cage may be used upon the plan of allowing the bees to liberate the queen by leaving the bottom door open and plugging the lower end of the cage with food, by removing which the bees will set free the queen. The food used for this purpose is a mixture of the finest powdered white sugar and honey to the consistency of dough. The queen and bees partaking of the same food, an amicable union is generally secured by the time the food is consumed, and the queen is free.

In the hands of beginners, or of those who have little experience in queen-introduction, the use of this cage is, perhaps, the safest method, and to such I recommend it as rendering the operation easy and fairly successful in result.

Secondly. *By Alley's cage.*—A cage, similar in construction and principle to the above, is pourtrayed and explained in Mr. Alley's work, entitled, *Twenty-two Years' Experience in Queen Rearing*. His cage is thus described:—

'I have for several years used the cage which I will now describe.

'Take a block of wood 3 in. long, 2 in. wide, and ½ in. thick, and bore through it a 1¼ in. hole one-half in. from one end; then take a knife and cut the slot or mortise A from the hole to the end of the cage or block, being careful not to cut out more than enough to allow the bees to pass through after the wire-cloth is fastened on.

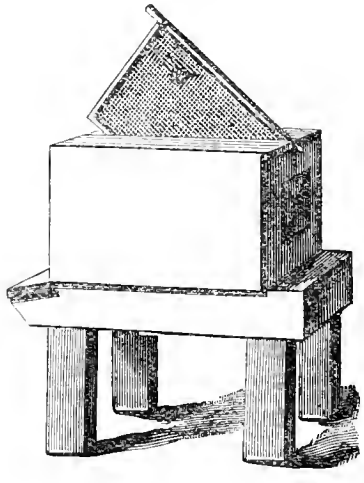


Now cover both sides with wire-cloth, as seen in figure; next cut the piece of tin, B, 1½ in. long and ¼ in. wide, and fasten it to one end of the cage by driving a wire-nail through the centre of it and into the cage. This is adjustable, and works on the principle of a button to a door; and when it is turned crosswise, as shown in the cut, the cage will hang between the combs, and thus will be held in position and prevented from falling down. The queen should be put in through the mortise hole, which should then be filled with a mixture of sugar and honey. By the time that the bees have removed this honey they will have become acquainted with the queen The bees must have been queenless three days before introducing *virgin* queens. If a little tobacco-smoke is used to scent the bees at the time the cage is put in, I think the undertaking will be rather more successful. Laying queens may be introduced by the same process.'

Virgin queens are considered most difficult of introduction to a full stock, but Mr. Alley states that he 'introduces hundreds of them every year, and has no trouble in so doing.'

Thirdly. *By the Pipe-cover Cage.*—Of all the cages I have tried—not excepting the one that bears my own name—I consider the pipe-cover most satisfactory. By means of it I have introduced many hundreds of queens. During the summer of 1882, between April and November, but chiefly in September and October, with this cage alone I introduced sixty-seven queens of all varieties—Italian, Holy Land, Syrian, Cyprian, Carniolan, and black—without a single failure, and since that date have introduced many more. The general method pursued was to remove the queen of the hive, and cage the stranger at once, during the same operation; after twelve hours' imprisonment and the blowing in of a little smoke, the hive was opened and the queen released. On two or three occasions only was she seized by the bees, and again caged for another period of twelve hours.

The annexed cut will explain the mode of caging and liberating the queen.



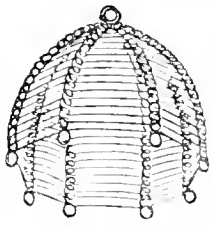
The queen of the hive being found and removed, a central frame (near the middle of the cluster of bees and the hive) containing sealed honey and brood, is placed as represented, quietly and without any jarring or disturbance. The alien queen, having been previously put in readiness, under the small cage on a piece of cardboard, and carefully covered to prevent chill, is now placed upon the comb, covering a cell or two of sealed honey, and close to brood; the cardboard is withdrawn with the left hand, while the cage is pressed into the comb with the right; a long needle is then passed through the base of the cage into the midrib of the comb, to prevent the bees from gnawing out the cage, and, the hive being closed, the operation is complete.

To liberate the queen the frame is raised, as before, the needle gently withdrawn, one side of the cage is sufficiently raised to allow the queen to walk out, and, if favourably received, food is offered by the bees, and she is allowed to go wherever she pleases.

But the operation of caging and liberating queens must be performed skilfully, and with much care and judgment. An old and experienced hand can tell, before releasing her from the cage, whether a queen will be accepted or not, and can introduce one successfully, while the novice will almost certainly cause her destruction, since he will liberate her when the bees are encasing the cage with evil intent, failing to notice the difference in their deportment when murderously inclined towards, and when struggling to embrace and to feed, the imprisoned queen. How many of these gentlemen, having failed in their endeavours, lay the blame on their tools, and on those who recommend them, never for a moment supposing that their own clumsiness and want of tact has caused the failure!

The pipe-cover cage which I first used was of German manufacture, and was supplied to me by the late Mr. Woodbury. It is hand wrought, of the finest wire, and permits free communication between the bees and queen, but not so free as to endanger the legs or the wings of the latter. I found, however, that its small size was an objection; its diameter, being barely one inch, prevented a large queen from moving freely within its precincts.

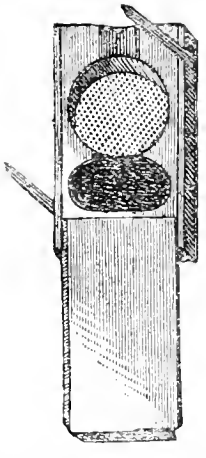
The one I now use is precisely similar in material and construction, but large enough to contain half a dozen bees together with the queen. In accordance with Mr. Benton's recommendation, I generally cage three or four bees with the queen, as her body-guard to feed and tend her, and find that the practice renders her more quiet, and less inclined, in her novel position, to quarrel with her new subjects.



When liberating a queen from one of these cages, it is especially important that the operator should be calm and self-possessed. If the hand trembles, and the queen or bees are squeezed, or roughly handled, trouble may ensue. Having at hand a strong goose-quill, which has previously been dipped in carbolic acid solution, and wiped dry, if the bees begin to surround the queen and bar her progress, seizing her by leg or wing, gently press the quill upon the forming knot, being careful not to touch the queen, and every bee will quickly decamp. Allow the queen again to proceed, and if again seized it is better to recage her at once for another twenty-four hours. Nervousness or timidity will only defeat your object, and there is really no danger of the queen being killed. The action of the bees, on opening the hive, should be carefully noted. If they are clustering closely on the cage, curving their bodies as if wishing to sting, and showing excitement, encasing, as it were, the cage and queen, they will not accept her if liberated. In this case close the hive, and leave it for another twelve hours. Finally you will succeed. This operation should be performed without gloves. The bees are too intent upon the queen's motions to sting the fingers, which may be gently inserted among an angry cluster with perfect impunity. In many hundreds of introductions I have never received a single sting on the fingers.

A queen's action has much more influence on the manner of her reception than her peculiar scent. If we can only get her to behave quietly, and to receive in good part the advances of her new subjects, the battle is won. Bees will accept a newly-hatched queen from another hive, although it has the scent peculiar to its own hive; and this they do because the young creature has no fear, and displays no animosity.

Fourthly. *The Peet Cage*, which is used, and highly recommended, by Mr. A. I. Root, is an American invention, and consists of a piece of wood $2\frac{1}{2} \times 3\frac{1}{2} \times \frac{1}{2}$ in., pierced by a $1\frac{1}{2}$ in. circular hole, and by two smaller ones adjoining, which contain food. One side of the cage is covered by wire cloth, and the other by a tin slide. Tin spikes 2 in. long, moving on a pivot, are attached to each side of the cage, which is largely used in America both as a travelling and an introducing cage. For introducing, the directions are as follows:—Take a frame with brood about to hatch, brush the bees away from a portion in the centre. Let the cage, in which are the queen and a few bees, cover a small part of the comb that has honey in it, with the tin slide next the cells, and push the tin spikes through the comb. Draw out the slide, and the queen and accompanying bees are on the comb. Press in the cage a little closer, and bend the spikes on the opposite side of the comb, to hold the cage firmly in position. Return the frame to its place in the hive and close up. Two days afterwards examine, and if the queen is still in the cage, cut a small hole through the comb from the opposite side to the honey-cells, and close the hive for two or three days. The bees will soon eat away the honey and let themselves in, or let the queen out. It is further added that there is scarcely any risk with this cage and method of introducing, which I also can affirm in the case of the few queens I have introduced according to the directions given, all being well received. The old queen should be removed and the new one introduced at the same operation, thus causing little loss of time.



Fifthly. *The Betsinger Cage* is also largely used in America, and is considered there to be one of the best introducing cages. It is formed of wire-cloth, in shape of the tin cover of an oblong box, and its dimensions are 3×4 in., with sides $\frac{7}{8}$ in. deep. To introduce by this cage, remove the old queen, and having put the new queen, with a few of her subjects, under the cage, on a piece of cardboard, place it on a comb containing brood and sealed honey, from which the bees have been previously brushed off. Arrange that the cage partly covers sealed honey near to brood and withdraw the cardboard, pressing the sides of the cage into the comb, and down to the septum. Next cut a half-inch circle, with a small penknife, from the side opposite to the cage, through the septum, and leave the circular plug of honey-comb formed thereby, hanging loosely in its place so that it can be easily removed by the bees. Finding that their queen is missing, and intent on removing the oozing honey, the bees will soon gnaw around the plug, and one of them finding its way into the cage, and being followed by others all will present their antennæ and their tongues, feeding the queen and showing their pleasure at having released her. Finding herself at liberty the queen will quietly leave the cage, and will enter upon her duties as the mother of the hive.

In conclusion, I may say that I never use the cage where there is an absence of brood, in its various stages, in the hive; I never liberate a queen before ascertaining the presence or absence of queen-cells, cutting them out when found; and I always cage my queens indoors, so that in the event of one escaping, on flying to the window she is easily recaptured—indeed, before releasing a queen from a pipe-cover cage, I often remove the hive to my bee-room, since a young queen will sometimes take wing on being set free from the cage.

So interesting and extensive is the subject of queen introduction, that having already, I fear, tried your patience to the utmost, I will only add that I have simply given my own experience of the methods enumerated, without bias towards any particular system, its inventors, or advocates. Success or failure generally determines a man's partiality for one system or another. Let us all be courteous and tolerant to each other, using no hard words, and imputing no unworthy motives, since the method which succeeds in one case may, perhaps, fail in another, so numerous and various are the conditions with which we have to deal.

Discussion.

Mr. G. Walker said the subject of queen introduction was extremely interesting, and one to which he had given considerable attention. Unfortunately, as a good many of them knew, he had failed with his Zulu queen, in consequence of which some critics had been good enough to say that he knew nothing of the subject. The more he studied it, after an experience of twenty years of bee-keeping, he felt convinced there was no infallible method of introducing the queen. He had introduced a good many scores of queens, and had tried every way that he had ever heard of. Direct introduction sometimes succeeded; the pipe-cover cage failed in some cases; the Raynor cage was very good, but sometimes disappointed. No doubt a hive of easy-tempered bees would take a queen much more readily than a hive of bad-tempered ones. Some people thought that the result was governed considerably by the time of day. He had tried introduction at all hours, from early morning to late at night, and certainly thought evening the best time; but he had been unsuccessful even then. It was useless to ignore failures, and he thought they ought to be acknowledged equally as much as successes. He quite agreed with Mr. Raynor that there was no perfect way of introducing the queen, one mode succeeding in one case, whilst another was necessary in another case. One correspondent objected to one system because it caused the queen to be daubed with honey, the very thing Mr. Raynor approved

of. Objections were made to the Peet-cage, because it destroyed the brood. There was no doubt that home-bred queens were much easier of introduction than foreigners. If the latter had been shut up any time or come over from Italy in an exhausted state the English bees would not receive them kindly. It was beyond question that some persons were more skilful than others in introducing queens, for they seemed to have the faculty of knowing intuitively which particular hive would receive or ball this or that queen. He could not say why his Zulu queen died. It had been said it was not wise to let the queen out when there were queen-cells. In answer to that he (the speaker) would say that he had had a queen caged for forty-eight hours in a hive where there were two or three queen-cells, and that no evil result had occurred in consequence. It was evident the subject was one in which they needed more experience.

Mr. Lyon said that Mr. Baldwin had mentioned a very good plan to him in reference to the introduction of queens. It was to kill the old queen, and inclose her in the same cage with the new one in order that this new queen might acquire the odour of the old one. He should certainly try it.

The Rev. Dr. Bartrum said, with regard to introducing the queen at particular times, he remembered Mr. Abbott telling him, several years ago, that bees went to sleep the same as human beings did. He thought if this was a fact, and that they turned over on their sides, it would be better to introduce a queen in the evening so that the bees might be caught napping.

Mr. Campbell confirmed Mr. Lyon's remarks respecting Mr. Baldwin's method of introducing the queen, and said he thought the chief reason of its success was that the bees always accepted the conqueror. This plan was always successful as far as he knew.

Mr. Barlow said he had kept bees for some years, and did not see the necessity of killing the queen in the manner spoken of. When uniting one stock to another, he always left it to the bees to decide which queen they would have.

Mr. Campbell said the reason of killing the queen was that the bees would ball the new queen. In a case where the new queen was introduced she had no supporters to guarantee her fair play.

The Chairman said Mr. Barlow's plan would do very well in the particular case he described, but otherwise it would not answer at all. He was fully of Mr. Raynor's opinion respecting the difficulty of queen introduction. He had tested almost every system, and had found them all more or less disappointing. He had never tried the plan recommended by Mr. Baldwin. His experience was the same as Mr. Raynor's with respect to evening being the time of day most suitable for queen introduction. No doubt when the queen had arrived from a distance the bees did not care to accept her unless she had quite recovered from the fatigue of her journey.

USEFUL HINTS.

The weather since our last has not, with the exception of a few days, been propitious to honey gathering, and now, except where there is heather or where a few acres of some honey-yielding crop afford locally a supply, the honey harvest may be considered to have ended, and the next thing to be thought of will be preparing the bees for wintering.

When removing racks of sections many will be found unfinished and consequently useless for sale or show. If these are carefully preserved and given to the bees next season much labour will be saved to them and a proportionately increased result obtained.

Unfinished Sections should have the honey extracted and be given to the bees to lick out. Placing them for this purpose behind the dividers, in the lower edge of which an entrance must be made to give access to them. The best way of doing this is to make two saw-cuts, 2 or 3 inches apart $\frac{3}{8}$ inch deep and split out the piece between the cuts, refix the piece in the gap with one french nail or a screw on which it can turn so that when a bee-tight divider is again required the little door thus formed can be swung into place. An entrance way in the dividers is always useful.

When cleaned and dry the sections must have all the propolis scraped off and then be wrapped separately in paper and stored in a dry place where mice cannot get to them; a few pieces of camphor will keep moths from them. When imperfectly filled sections contain heather honey, they cannot be emptied in the extractor. They must either be uncapped and given to the bees to empty or melted down at a temperature not much higher than is necessary to melt the wax and cause it to float, or pressed by a machine invented for the purpose in Scotland. This should be the best way, as heat must to some extent injure the fine aroma of the honey.

Utilisation of Old Combs.—Manufacturers of foundation often tell us that old combs are not worth preserving and that it is best to melt them down and give sheets of foundation to replace them. If straight and otherwise suitable it is not necessary to destroy them by melting or to remove them from the frames. If the old black cells are scraped off down to the midrib and this given to the bees they will rebuild the walls. These rebuilt combs are much tougher and able better to bear hard usage in extracting than new ones built from foundation. The scrapings will of course be saved for melting.

Recovery of Wax.—The plan introduced in Italy some time ago is now being slowly adopted here, and at most shows the collections of appliances include a solar wax extractor. Although we cannot depend upon such sunny days as in Italy, still when the sun does shine the heat is great enough to cause the wax to run in a properly constructed extractor. It is thus shown that dry heat is all that is necessary for the purpose and that the dirty, messy job of boiling the wax and the domestic hot water into which it gets the bee-keeper who has used half the kitchen utensils in the job, and left them more or less coated with wax and dirt, may be discarded. If we have not the skies of sunny Italy, we have ovens, and if the cuttings, &c., of wax are placed upon a sheet of fine wire cloth over a tray and the whole put into the oven the wax will run and be recovered of far finer quality and colour than by boiling.

Condemned Bees.—Whenever an opportunity occurs of saving the lives of these unfortunates, let the experienced bee-keeper embrace it. But we would ask novices to acquire experience before rashly trying to teach others. Much harm is done to the cause of the humane system by the remembrance by cottagers of failure on the part of one whom of course they concluded knew what he was doing. Having obtained the bees do not by want of consideration lose them and your trouble. Remember that if left alone in their old home they would be in a position to prepare for wintering with little or no labour. And if you call upon them to undergo labour which they should not (and would not if left alone) have to perform, their vitality is so lowered that if they survive the winter they will rapidly dwindle away in the spring. They are taken from ready built and stored combs and must be returned to similar ones. If they are put into empty hives and expected to draw out and store combs they will be sure to succumb in the spring. Therefore prepare now for them, and as soon as your supers are off set your strong colonies to work building and storing combs for the condemned ones. Where the doubling system is practised, condemned bees are most useful to re-populate the upper set of combs when removed and so keep up the number of stocks. Each doubled stock

becoming two in autumn to be again doubled to one in spring.

Re-queening.—In taking condemned bees you will get many casts and some old stocks, all having of course young queens. Preserve all these, let each stock which you make up have a young queen, and if you have any old queens in your apiary replace them by the surplus young ones thus procured.

Feeding.—The short supply of honey this year will no doubt lead to closer extracting than usual. Let no time be lost in feeding up for the winter. Unfortunately this necessary operation often coincides in point of time with the annual holiday, and the difficulty is to leave some one in charge who can and will undertake it. Here the dry sugar system comes as 'a boon and a blessing to men,' as the advertisement says. By leaving a large dry sugar feeder charged, all trouble is saved and no unpleasant thoughts need enter the mind as to 'How those bees are getting on?'

Robbing.—As the honey flow ceases, the danger of robbing comes on. The same cautions must be given as have been repeated year after year, to avoid giving bees any taste of food except in their own hives. If once they get it they will search about for further supplies. On no account put down broken combs, cuttings, &c., for the bees to clear out, this is a fruitful source of robbing. Always give them behind the divider, or in some way so that the bees to which they are given, alone have access to them. If feeding with syrup, be careful not to spill it about. Use a feeder which cannot be robbed. Reduce the entrances of weak hives with strips of perforated zinc. This is better than wood at this season when free ventilation is still required.

ASSOCIATIONS.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

Royal Visit to the Southampton Show.

The year 1886 will always be reckoned as one of the most important to those interested in the modern industry of bee-keeping, and may in future justly be called the bee-keepers' jubilee year. In addition to the regular County Shows held throughout the country, three events of paramount importance will long be remembered as having been the means of bringing prominently into the public view the new national industry. First, there was was the visit of T.R.H. the Prince and Princess of Wales at the Norwich Show, a visit fraught with general interest; secondly, the fine display of honey at the Colonial and Indian Exhibition at South Kensington; and now we have to chronicle the most interesting, and probably the most important of all, viz., the visit of H.R.H. the Princess Beatrice to Southampton to open the Show and distribute the prizes of the Hants and Isle of Wight Bee-keepers' Association. In thus placing the latter event in the foremost rank, we do so in no manner ignoring the importance of the two former ones; but whilst recognising the interest shown by the Princess of Wales at Norwich, and the delightful reunion of bee-keepers at the Colonial exhibition, there was in both these cases lacking that public exhibition of sympathy, amounting to absolute enthusiasm, evinced on Saturday last at Southampton. Whether we turn to the Hampshire press for the last month, or to the actual journey of H.R.H. the Princess Beatrice, a visit ostensibly undertaken for the purpose of opening the show and distributing the prizes; or to the preparations of the ancient and important town of Southampton involving an expenditure of public money amounting to nearly 1000*l.*, an expenditure which largely exhausted itself in the display of 'bee-hives' in the form of triumphal arches, street decorations, and the like; or to the public response which caused ladies in all their summer finery to crowd every carriage—aye, even the vans—of each train travelling to Southampton from such feeding centres as Bishopstoke Junction or Ringwood Junction, we shall find in each and all an indication of public sympathy and enthusiasm from tens of thousands of people, which cannot but result in a larger recognition of the aims of bee-keepers. In Hampshire especially it may be said a new era has dawned; but the effect of last Saturday cannot be said to terminate there, for the gathering of the world of wealth and fashion was by no means confined to the county, London and more distant centres being largely represented. To say nothing of the account in the *Court Circular*, which mentioned, we may be allowed to say with pride, the Princess in the capacity of 'President' opening the Show and giving away the prizes, the notice of the Show in such papers as the *Times*, the *Daily News*, &c., the newspapers of Hampshire devoted not merely columns but whole sheets to an account of every detail connected therewith; and it cannot but be gratifying to bee-keepers generally to read of the exceptional position occupied by the Hon. Secretary and Mrs. Bellairs, together with the Rev. Walter E. Medlicott, chairman of Committee, as representing the Hampshire branch of the British Bee-keepers' Association.

We extract the following account of the Show from the *Hampshire Independent*:—

'The Royal Visit to Southampton.

'The ancient and loyal borough of Southampton was *en fête* on Saturday on the occasion of the visit of her Royal Highness Princess Beatrice and her husband, Prince Henry of Battenberg, who were accorded a welcome that equalled in enthusiasm, if indeed it did not exceed, that tendered to the Prince and Princess of Wales when, in August, 1878, they came to the town to lay the memorial stone of the new parish church of St. Mary. For the honour of the present royal visit, Southampton is indebted to the Hampshire and Isle of Wight Bee-keepers' Association, of which the Princess is President. This Association, which has done much to promote the cultivation of bee-keeping, has, for some years past, held an exhibition supplementary to the great summer flower shows of the Royal Horticultural Society of Southampton, and on the marriage of the Princess last year the members made her an appropriate present in the form of a diamond brooch, shaped like a bee, eliciting from her Royal Highness a graceful acknowledgment, which, no doubt, resolved itself into a ready acceptance of the invitation afterwards tendered her by the Association to come to the meeting at Southampton and distribute the prizes gained in the exhibition of bees and bee appliances. When the invitation had been finally accepted, Mr. Bellairs, secretary of the Association, through Major-Gen. Lacy, chairman of the Committee of the Horticultural Society, placed himself in communication with the Mayor, and it was ultimately decided to accord the royal party a public reception. The whole arrangements were entrusted to a Reception Committee formed of representatives of the Corporation, the Harbour Board, the Royal Horticultural Society of Southampton, and the Bee-keepers' Association. The result of their united labours, supplemented by a vast deal of private effort—and aided by most perfect weather—resulted in a demonstration which clearly proved that Southampton, though not often honoured with royal visits, maintains its traditional loyalty, and which evoked from the Princess herself the expression that she had been very much touched. Mr. W. B. G. Bennett, the borough surveyor, was asked by the Reception Committee to undertake the superintendence of the public decorations, and the effective manner in which these were carried out, do him, and those associated with him, great credit. The appearance of the town on the occasion surpassed all expectations, and we are very pleased to record a most brilliant success. The magnificence of the reception exceeded anything of the kind previously witnessed in this loyal town, and the highest credit is due to the authorities, Corporate and Horticultural, to the inhabitants at large, and, indeed, to everyone who in any way contributed to give *éclat* to the ceremony.

'THE RECEPTION AT THE ROYAL PIER.

'From an early hour in the morning the town was all astir, while the work of decoration was proceeded with in all haste so as to be complete by the time of arrival, and by 11 o'clock the streets were thronged by thousands who were wending their way to the Town Quay and adjacent parts. In accordance with the official notice, the Mayor and Corporation, magistrates, members of the Harbour Board, and others who had been invited, assembled at the Municipal Offices, and at a quarter to 12 o'clock a procession was formed, and, headed by the mace-bearers, went on foot to the Royal Pier to await the arrival of the royal party. The scene on the river was very pretty, for the large fleet of yachts already there on Friday, had been augmented by arrivals from Cowes during the morning, and these, almost without exception, were dressed with bunting from stem to stern. The procession walked to the daïs at the pier-head, and was soon followed by a troop of the Hampshire Yeomanry Cavalry under Colonel the Hon. H. G. L. Crichton, which was to act as escort to the royal party to and from Westwood Park. The First Hants Artillery Volunteers, under Lieut.-Colonel Bance, J.P., about 180 strong, were the next to arrive, and lined up in front of the daïs as a guard of honour, a detachment under Captain Bee having been told off to fire a royal salute from the Platform Battery. The *Alberta*, under the command of Captain Fullerton, R.N., and flying the Royal Standard at the main, was sighted from the pier at 12h. 25m., and a very few minutes sufficed to bring her alongside the pier. The landing of the royal visitors was, on a signal given, announced to the tens of thousands who were eagerly expecting their arrival by the guns from the Platform, and Captain Hargreaves's schooner yacht *Ianira*, lying off the pier. The Prince and Princess, who were attended by the Hon. Miss Cochrane and Major Bigge, C.B., were received at the gangway by the Mayor, Mrs. Green, his sister, acting as Mayoress; Sheriff Brown, and the borough members. The Princess, who looked exceedinaly well, was attired in a grey-green Surah silk dress, and a bonnet to match, with a small white feather in the front, the jewellery consisting of a diamond brooch, the design of which was at once chaste, pretty, and appropriate, being a bee, and which was presented to her Royal Highness by the members of the Hampshire and Isle of Wight Bee-keepers' Association on the occasion of her marriage last year, and gold braeelets. The Prince and Princess appeared highly pleased with the hearty welcome accorded them, both bowing their acknowledgments to the respectful salutations with which they were greeted. The Town-clerk then read the loyal address from the "Mayor, Aldermen, and Burgesses of the ancient and royal borough of Southampton, in council assembled," after which the royal party, preceded by the Mayor and Corporation, the Reception Committee, &c., proceeded in open carriages to Westwood Park, where the joint show of the Hants and Isle of Wight Bee-keepers' Association and the Royal Southampton Horticultural Society was held.

'THE RECEPTION AT WESTWOOD.

'The arrival of the Royal party at Westwood was marked by the Rifle Volunteer band playing the National Anthem. The Prince and Princess were awaited by a large and distinguished company of visitors and subscribers, and special arrangements were made for the reception of the Royal guests by the joint committees of the Horticultural Society and Bee-keepers' Association. At the entrance to the ground a triumphal arch had been erected by Mr. C. Burch, of the Avenue Hotel, a member and frequent exhibitor of the Horticultural Society. It bore the word "Welcome" in large letters on each side, the reverse being designed for illumination at night, with the initials on each side "H. B." and, composed of evergreens and flags, was surmounted by the Royal Arms. The flagstaff and other portions of the park were profusely decked with bright-coloured bunting.

'As the procession of carriages arrived at the park their Royal Highnesses were greeted with hearty cheers, which were renewed on their driving into the ground and to the enclosure, to which only three carriages were admitted, containing the Royal couple, the borough members, Major Bigge and Mrs. Cochrane, the Mayor and Mrs. Green, the Sheriff and Mrs. Brown. The guard of honour having presented arms, the Prince and Princess immediately alighted from the carriage, and were surrounded by the Mayor and Corporation, Colonel Stotherd, R,E., and Colonel Bance, together with Major-General Lacy, Captain E. Gibbs, members of the Committee of the Horticultural Society, and the leading officials of the Bee-keepers' Association. Their Royal Highnesses were received by the Right Hon. the Earl of Carnarvon, who, having successively presented Major-General Lacy as Chairman of the Horticultural Committee, and Mr. E. H. Bellairs as Hon. Secretary of the Bee Association, intimated that he was present to discharge the functions of the President (Baron Montagu of Beaulieu), who was abroad for the benefit of his health, and he presented the following address:—

'"TO HER ROYAL HIGHNESS PRINCESS BEATRICE, MARY VICTORIA FEODORE, PRINCESS OF BATTENBERG.

'"May it please your Royal Highness,—

'"We, the President, Vice-President, Council, and Members, of the Royal Southampton Horticultural Society, and the Vice-Presidents, Committee, and Members, of the Hants and Isle of Wight Bee-keepers' Association, desire to accord to your Royal Highness and Royal Consort a most hearty welcome to our united exhibition, and to express how highly we appreciate the honour conferred upon us and the town of Southampton by the visit of your Royal Highnesses on this auspicious occasion.

'"The Southampton Horticultural Society was established in 1862 for the encouragement of horticulture and cottage gardening. From that time the Society has steadily increased in importance, and now numbers nearly 1200 members, whilst its shows are admitted to be amongst the most important held in the kingdom. It has had the honour of including amongst its Presidents His Royal Highness the late and greatly-lamented Duke of Albany, and His Serene Highness Prince Edward of Saxe Weimar, and in 1879 received the command of Her Most Gracious Majesty the Queen to assume the title of Royal.

'"The interest taken in the exhibitions of the National Bee-keepers' Association, held in connection with former flower shows at Southampton, led to the formation of the Hants and Isle of Wight Bee-keepers' Association, of which your Royal Highness is President. The Association has already done much to promote and improve the science of bee-keeping in the county. The members desire most respectfully to express the hope that as your Royal Highness has graciously interested yourself in the birth of the new industry of modern bee-keeping in Hampshire, so you will be pleased to continue to watch over the growth of the same as one means of bettering the condition of the working classes, especially that of the agricultural labourer.

'"We have again to express to your Royal Highness our sincere and grateful thanks for your great kindness in coming to open our joint exhibition and distributing the prizes to the successful competitors in the Bee and Honey Department. We earnestly trust that every blessing may attend your future life and that of your Royal Consort, Prince Henry of Battenberg, and every member of the Royal Family.

'"'Signed by

'"'The Right Hon. the EARL OF CARNARVON (On behalf of Baron Montagu of Beaulieu, President of the Royal Southampton Horticultural Society),

'"'Major-General LACY (Chairman of the Council) and

'"'E. H. BELLAIRS (Hon. Secretary of the Hampshire and Isle of Wight Bee-keepers' Association).

'This joint address was beautifully illuminated by Mr. W. C. Clarke. At the top were the arms of Prince and Princess Henry of Battenberg; on the right-hand side in the centre a shield with the borough and county arms; on the opposite side a monogram formed of the initials of the Princess, "B.M.V.F."; within a rustic border gracefully-disposed honeysuekle on a silver background, with a few bees appropriately introduced, indicated the two societies from which the address emanated.

'Her Royal Highness having received the address, she briefly thanked his Lordship for its presentation. H.R.H. was then conducted over the Bee Department by the Hon. Secretary, Mr. Bellairs. The honey tent was first visited, where the various exhibits were pointed out and explained to the Royal party by Mr. Bellairs. Their Royal Highnesses

took especial interest in a design in honeycomb representing the letters H.R.H.P.B.B., exhibited by William Woodley, of Newbury. The observatory hives also came in for a large share of their attention—the queen-bees being specially pointed out, and engaging the particular interest of the Royal visitors. When their Highnesses had finished their inspection of the various objects of interest collected in this tent, Mr. Bellairs presented Mrs. Bellairs to the Princess, with whom she cordially shook hands. Mrs. Bellairs then had the honour of presenting to Her Royal Highness a beautifully-finished section of honey, the produce of Mr. Bellairs' apiary, enclosed in a chaste silver frame of elegant design; also a copy of the pamphlet *Modern Bee-keeping*, handsomely bound in morocco and gold—both of which were graciously accepted. At the tent door the little daughter of Mr. Hunt presented to her Royal Highness a copy of the Exhibition Catalogue, elegantly bound in white satin and lettered in gold, which the Princess very graciously accepted. The Royal party then entered the bee tent, under the charge of Mr. Bellairs, H.R.H. Prince Henry expressing great concern for the safety of the Princess. Here they were received by the Rev. Walter Medlicott, Chairman of the Bee Committee, who, in a succinct address, set forth the objects and scope of the Bee Association, and explained the principles of modern scientific bee-keeping. He was ably seconded in his efforts by Mr. Evan Maberly, on whom devolved the practical part of the work. Mr. Maberly skilfully drove a stock of bees from their own hive to a new one, deftly capturing the queen, and exhibiting her majesty, enclosed in a glass bottle, to the Royal party. Mrs. Bellairs, having meanwhile obtained the Royal permission, also entered the gauze tent, and showed how feasible it was for a woman, though quite unprotected by gloves or veil, to perform all the operations of practical bee-keeping.

'The royal party was then conducted by General Lacy to the flower tents; after which an adjournment was made for lunch. This was provided by the Mayor, and was served in a special tent. The following guests had the honour of lunching with their Royal Highnesses:—The Mayor of Southampton and Mayoress (Mrs. Green), the Earl of Carnarvon, Mr. and Mrs. Bellairs, Major Bigge, C.B., Miss Cochrane, General and Miss Lacy, the Rev. A. N. Obbard, Mr. and Mrs. R. Scott Hankinson, the Sheriff and Mrs. Edward Brown, the ex-Mayor and Mrs. James Bishop, and Mr. Giles and Admiral Commerell, the Members for the Borough.

'The main part of the ceremony next followed, viz., the distribution of prizes to the successful competitors in the honey department. This was arranged from an elevated daïs, sheltered by a fine elm-tree in Westwood Park. Hereon was placed a table, where the handsome new silver medals of the Hants and Isle of Wight Bee-keepers' Association were displayed, together with the various money prizes in envelopes. The medals bear on the obverse side the arms of the county of Southampton, and on the reverse the name and date of the show with the legend 'H.R.H. Princess Beatrice, President,' encircling. H.R.H. Prince Henry stood in front of this, having on his right the Princess and on his left Mr. Bellairs and the Earl of Carnarvon. At this point the sun shone brightly, and the picture was one not to be forgotten by those present, the fashionable and very large gathering of ladies from all parts of Hampshire contrasting exquisitely with the green turf and leafy shade of the Westwood Park.

'In obedience to her commands, Mr. Bellairs having intimated Her Royal Highness's desire that the gentlemen present should put on their hats because of the sun, the distribution of the prizes was then proceeded with, the hon. secretary calling for the various successful competitors, who filed past; H.R.H. Prince Henry putting the prizes into silk bags, bearing in gold letters "Presented by H.R.H. Princess Beatrice, 1886," handing these to the Princess, who duly presented them to the fortunate winners amid the plaudits of the visitors. When it came to the turn of Mr. Bellairs, who had succeeded in carrying off the first prize for extracted honey open to all England, the Prince and Princess cordially congratulated him with a shake of hands, and the Rev. Walter Medlicott also came in for a large share of public applause.

'When the list was got through, Mr. Bellairs thanked Her Royal Highness, on behalf of the Bee-keepers' Association, for having distributed the prizes. He said he felt quite unable to find words to convey the gratitude they owed Her Royal Highness for what she had done for them that day. Her visit, he felt sure, would be the cause of furthering the national industry they wished to establish among the cottagers of England.—Lord Carnarvon said he was desired, on behalf of the Horticultural Society, to tender to Her Royal Highness Princess Beatrice and Prince Henry of Battenberg their grateful thanks for their presence, and the Princess's gracious distribution of the prizes would long be remembered by those who had received them at her hands, and he hoped in the future would be a stimulus to them and to others to try and deserve equally well. Prince Henry of Battenberg having spoken to his lordship, the Earl of Carnarvon said: "I have the command of Her Royal Highness to say to all those present, and who have taken part in this welcome, that Her Royal Highness appreciates it thoroughly. She has enjoyed her visit here to-day, and she will carry away pleasant recollections of the good, ancient, and loyal town of Southampton" (applause).—The Royal party then proceeded to the carriages, and, escorted by the mounted yeomanry, left amidst hearty cheering from the large number assembled, the band again playing "God save the Queen."

Their Royal Highnesses left the grounds at a quarter past three, the order of the procession being supposed to be the same as on the journey to the Park. The return route was *viâ* the Avenue, Bellevue Place, Brunswick Place, East Park Terrace, New Road, St. Mary Street, Marsh Lane, Terminus Terrace, and the Platform to the Pier, and the whole of this lengthened distance was thronged, the Royal party receiving from end to end the most loyal greetings. At the BEEHIVE *arc de triomphe*, on the railway bridge at the top of St. Mary Street, the crowd of spectators was more dense than at any other portion of the route, it having rightly been divined that the novel character of this decoration might induce the Royal party to inspect it. The Princess's carriage made a short stay here, and her Royal Highness afterwards expressed, through her husband, her pleasure at having seen a structure alike novel and appropriate to the occasion. The Pier gates were reached shortly after four o'clock, the Corporation and others alighting, the Royal carriage, with that of the Mayor, being driven right up to the daïs. On arrival the Princess, shaking hands with the Mayor, at once thanked his Worship for the enthusiastic reception which had been accorded her and her husband, adding that they had both spent a most pleasant day, and that the arrangements appeared to have been most excellent. The Royal party then, amid the hearty cheers of those assembled, proceeded to the *Alberta*, which was detained some time through the expected arrival of the Hereditary Grand Duke of Hesse, who had left London on a visit to the Queen at Osborne, and at half-past four the royal yacht steamed away for Osborne, amid salutes from the Platform and the *Ianira*, the Prince and Princess remaining on the quarter-deck and acknowledging the parting greetings which were given them as the vessel left. The Mayor and Corporation, Magistrates, &c., adjourned to the Audit House, where light refreshments were served, and his Worship was heartily congratulated on the success of a day which was undoubtedly a red-letter one in the history of Southampton.

'The following gratifying letter was received on Sunday morning, by the Mayor of Southampton, from Prince Henry of Battenberg, in acknowledgment of the enthusiastic public reception which the Princess and himself received on the previous day:—

'"*Osborne, August* 1*st*, 1886.

'"DEAR SIR,—I write to you to express the deep gratification of Princess Beatrice at the brilliant and loyal reception which Southampton yesterday accorded to her, and at the same time to thank you very sincerely for all your kindness.

'"The admirable arrangements and the hearty welcome which we met with in the beautifully decorated streets were most striking.

'"We shall, I can assure you, always preserve the pleasantest remembrance of yesterday's proceedings.

'"I am, dear Sir, yours very truly,

'"HENRY OF BATTENBERG.

'"The Mayor of Southampton.'"

The Exhibition of Bees and Bee Appliances.

The exhibits occupied three tents, and the entries were larger than had ever been brought together at any county show, and far in excess of any previous exhibition in Hampshire. The competition in some classes was exceedingly keen, particularly in that for extracted honey, where the judges had an extremely difficult task. It may be of interest to know that the old localities of Stockbridge, Andover, Christchurch, and Swanmore, are again to the fore in regard to the awards, which proves that the finest honey is a local production rather than the result of skill. The judges were the Rev. W. E. Medlicott, Swanmore; Rev. P. P. Izard, Winchester; Rev. W. H. Bull, Titchfield; Dr. Blake, Bournemouth; Mr. Tee, Lymington; Mr. Hunt, Odiham; and Mr. Baigent, St. Denys.

Through an unfortunate omission to 'read all the rules and regulations carefully,' both Messrs. Abbott Bros. and Sidney Dickens were excluded from many of the classes in which they were entered, owing to their inability to stage by the required time; and it is much to be wished that their misfortune should act as a warning, as it was quite impossible to afford assistance owing to their having used the printed labels supplied in an indiscriminate fashion, hives being labelled as honey and *vice versâ*.

The list of awards was as follows:—

Open to all England.

Class I. Best 24 lbs. of super honey in sections not exceeding 2 lbs. each: 1, William Woodley, Newbury; 2, E. Ainsley, Swanmore; 3, E. H. Bellairs, Wingfield; H.C., Rev. P. P. Izard, Morestead Rectory.—II. Best 24 lbs. of extracted honey in 1-lb. or 2-lb. vessels: 1, E. H. Bellairs; 2, Wm. Woodley; 3, W. E. Duffin, Waterford, Ireland.—III. Pure extracted honey put in most attractive mode for purposes of sale: 1, W. Woodley; 2, J. J. Candey, Portsmouth; special honorary prize, Patent S. O. Box Company, London.—IV. Best design in honey-comb: 1, Wm. Woodley; 3, J. J. Candey.—V. Largest and best collection of modern hives and appliances: 1, T. B. Blow, Welwyn; 2, C. T. Overton, Crawley; 3 (equal), Abbott Brothers and Sidney Dickens.—VI. Best observatory hive, stocked with bees: 1, T. B. Blow; 2, C. T. Overton.—VII. Best imported queen-bee: 1, T. B. Blow.—VIII. Best 2 lbs. of brood foundation and 2 lbs. of super foundation: 1, S. J. Baldwin, Bromley; 2, T. B. Blow.—IX. Best and most complete bar-frame hive, price not to exceed 35*s.*: 1, Thomas Tanner, Ringwood; 2, T. B. Blow; 3, W. J. Warner, Martock.—X. Ditto, price not to exceed 25*s.*: 1, T. B. Blow; 2, A. D. Woodley, Reading; 3, C. T. Overton.—XI. Best cottagers' hive: 1, A. D. Woodley; 2, T. B. Blow; 3, S. J. Baldwin; Highly commended, C. T. Overton.—XII. Best honey-extractor: 1 and 2, W. P. Meadows, Leicester; 3, T. B. Blow.—XIII. Best section-rack: 1, T. B. Blow; 2, C. T. Overton.—XIV. Best skep and section-rack: 1, T. B. Blow; 2, C. T. Overton; 3, A. D. Woodley.—Champion prize. Best 12 lbs. section and 12 lbs. extracted honey: 1, H. Puzey; 2, Wm. Hunt; 3, C. Richmond; Highly commended, G. Horner.—XVII. Ditto, ditto. Cottagers and artizans only: 1, E. Ainsley; 2, J. Giles; 3, J. Downton.—XVIII. Best 12 1-lb. sections: 1, Miss E. E. Myers; 2, Miss Medlicott; 3, Miss Johnson.—XIX. Ditto. Cottagers and artizans only: 1, E. Ainsley; 2, T. Giles; 3, A. Roots.—XX. Best 24 lbs. of extracted honey: 1, Mrs. Hughes, Stockbridge; 2, James Downton, Andover; 3, Thomas Giles, Salisbury.—Best 12 lbs. ditto: 1, Mrs. Hughes; 2, Allen Broom, Christchurch; 3, Miss Martin, Swanmore.—Ditto for cottagers and artizans: 1, Allen Broom; 2, J. Downton; 3, E. Ainsley.—Best super of honey (cottagers): 1, Mrs. William Burgess, Christchurch.—Most ornamental and best arranged display of honey: 1, Thomas Giles.—Ditto, weight under 100 lbs.: 1, Rev. W. Medlicott, Swanmore; 2, J. J. Candey; 3, Miss Myers, Swanmore.—Best sample of beeswax: 1, William Burgess; 2, George Forward, Christchurch; 3, Arthur Stephens, Christchurch.—Best home-made hive (amateur): 1, William Welch, Southampton; 2, Evan Maberly, Christchurch; 3, Arthur Stephens.

The lecture tent on Saturday was under the charge of the Rev. W. E. Medlicott, and on Monday of Mr. Bellairs. We understand two new speakers 'won spurs' on the latter day, viz., Evan Maberly, Esq., of Mudeford, and Mr. J. J. Candey, of Portsmouth. Mr. Bellairs also held an examination for experts, in which four candidates were successful. The honey tent was under the supervision of the Rev. H. W. Bull, vicar of Hook, assisted by Mr. Baigent, of St. Denys. Mr. Allen Broom and Mr. C. J. Chambers, both of Christchurch, acted as salesmen, and we understand they disposed of nearly 30*l.* worth of honey. Very few Hampshire bee-keepers but were present on one or other of the days, and we were pleased to meet amongst them the Rev. T. Pemberton Bartlett, Dr. and Mrs. Ticehurst, Mr. W. J. Joyce, Mr. H. W. West, the energetic secretary of the Swanmore Branch, Mr. W. Hills, Mr. E. A. Colborne, &c.

The receipts at the turnstiles of the Park exceeded the most sanguine expectations, amounting to nearly 700*l.*, an altogether unprecedented amount; and we trust the Horticultural Society will in consequence be induced to share liberally their gains with the Hants B. K. A., even as the latter shared their honour and glory of the day.

SURREY COUNTY ASSOCIATION.

The annual exhibition of bees, honey, &c., was held on the 28th July at Leatherhead, in conjunction with the local Horticultural Show, in the grounds of Elm Bank, by the kind permission of E. J. Richards, Esq. The weather was charming, and the attendance was very large.

The exhibition of honey, wax, and hives, was arranged in a spacious and handsome marquee, kindly lent by T. Lucas, Esq., of Ashtead, gracefully decorated by flags, &c., and a fine display of upwards of a quarter of a ton of new honey in sections and glass bottles was staged on the tables, besides beeswax and other interesting exhibits, including a bees' nest and comb in a large beech tree from East Horsley, by Mr. Oliver, and a nest of live wasps by Mr. Fagence.

In the centre of the tent was a trophy of antiquated straw hives, exhibited by Mrs. Culverhouse of Sutton, from the gigantic hive of Mr. Pettigrew to the humble cottager's old straw skep, now discarded for the admirable modern bar-frame hives exhibited round the tent by Mr. Overton and others, and by Messrs. Abbott Brothers, in a second very handsome tent, kindly lent by the Rev. Canon Bridges, of Beddington, which was filled with bee appliances of every novelty and description.

The manipulating tent of the British Bee-keepers' Association was pitched beyond, in which practical lectures in bee-driving and various manipulations were given during the afternoon by Captain Campbell, the honorary secretary for Surrey, and by Mr. F. Lyon, to large and intelligent audiences: Mr. James Abbott, of Southall, acting as expert. Several observatory hives were also exhibited under a shady tree, and proved a great attraction. An excellent band contributed to make the show a great success, though the quantity and quality of the honey staged were below the average owing to the late and unfavourable season.

The district secretary, Mr. S. Wellings, and the local Committee, are entitled to the best and cordial thanks of the Association for their admirable exertions, and also to Messrs. C. N. Abbott and F. Lyon, for their kindness in acting as judges, assisted by Mr. F. H. Lemare, local secretary for Guildford.

The prizes were presented in the evening by Mrs. J. Anderson amidst hearty cheers, and the following is a list of the successful competitors:—

Bees.—Open to all comers.—Stock of bees with their queen in an observatory hive: 1, Abbott Brothers; 2, Charles T. Overton.—For cottage members only.—Stock of

bees in a straw hive: 1, W. F. Fagence; 2, Edward Weller. —For members only.—Stock of bees in a bar-frame hive: 1, W. G. Maspero; 2, Richard Siggery.

Honey.—For cottage members only.—Six 1-lb. sections of honey—1st prize, bronze medal of the British Bee-keepers' Association and 5*s.*; 2nd, certificate British Bee-keepers' Association and 2*s.* 6*d.*: 1, A. J. Saunders: 2, Thomas Chater; 3, Edwin May.—Any Surrey cottagers.—Cap or super of honey in the comb: 2, George Ryde. For all members S. B. K. A.—Twelve 1-lb. sections of honey.—1st prize, silver medal British Bee-keepers' Association and 'Neighbour's Feeder': 1, W. H. Coldwell; 2, Abbott Brothers; 3, William Hollier; 4, Thomas Chater.—Members of S. B. K. A.—Novelty in comb honey: 2, W. G. Maspero.

Honey (run or extracted).—Cottage members only.—Six 1-lb. bottles of honey: 1, Joseph Harrison; 2, Edwin May. For any member S. B. K. A.—Twelve 1-lb. bottles of honey: 1, J. Richardson; 2, Frederick Parfitt; 3, Thomas Chater: 4, William Hollier.—For all Surrey.—Exhibition of honey in any form: 1st and 2nd prizes divided between Walter Hollands and William Hollier; W. J. Maspero, 3.—For any member S. B. K. A.—Exhibit of beeswax: 1, Abbott Brothers; 2, Frederick Parfitt; 3, W. Hollands.—Collection of hives and apiarian appliances, no two articles alike: 1, Abbott Brothers; 2, Charles Overton.—Moveable bar-frame hive, calculated to be generally useful to cottagers, price not to exceed 15*s.*: 1, Charles Overton; 2, H. Fewtrell.—Super case for ordinary straw skep hive: 1, C. Overton; 2, H. Fewtrell; R. Siggery commended.

Local Prizes.—Leatherhead district.—For all comers.—Stock of bees in any hive: 1, Richard Siggery.—For all members.—Six 1-lb. sections of honey: 1, C. E. Cuthill; 2, S. Wellings; 3, W. G. Maspero.—All comers.—Cap or super of honey, not sections: 1, E. Underwood; 2, Thomas Earle.

LEICESTERSHIRE BEE-KEEPERS' ASSOCIATION.

The annual show of this Association took place at Leicester on July 28th and 29th. There were ninety entries, but of these only sixty-three were staged, as, owing to the lateness of the season, many of the exhibitors were unable to compete in the honey classes. Notwithstanding this, the show was a very fine one, both as regards bee-appliances and honey. The bee-tent was on the ground in good time, but it took all the morning and part of the afternoon to erect it. It is here suggested that ability to erect the bee-tent be one qualification for expert. R. R. Godfrey, Esq., was appointed judge by the B. B. K. A., and made the following awards:—

Bees.—I. For the best stock of bees, of any race, to be exhibited living, with their queen, in Observatory hives, 20*s.*, 15*s.* Seven entries. First, S. Partridge, Shangton; second, C. Foxon, Croft; third, W. P. Meadows, Syston.

Honey.—II. For the best exhibit of super honey, not to exceed 50 lbs., 20*s.*, 12*s.* 6*d.*, 7*s.* 6*d.* Nine entries. First, J. W. Bickley, Melton; second, C. Foxon, Croft; third, W. S. Pridmore, Hinckley.—III. For the best exhibit of run or extracted honey in glass jars, not to exceed 50 lbs., 20*s.*, 10*s.*, 5*s.* Seven entries. First, G. Squires, Waltham; second, Mrs. Ball, Waltham; third, Mrs. Lippin, Waltham.—IV. For the best comb honey in sections, 24 1-lb. sections, British Bee-keepers' Association's silver medal. Five entries. First, J. W. Bickley, Melton.—V. For the best run honey, in 12 1-lb. jars, first prize, bronze medal; second, certificate and 5*s.* Eighteen entries. First, Miss Chester, Waltham; second, G. Squires, Waltham.

Hives, &c.—VI. For the best frame hive, price not to exceed 10*s.* 6*d.*; 15*s.*, 10*s.*, 5*s.* Five entries. First, C. E. Walton, Muskham; second, Abbott Brothers, Southall; third, C. Redshaw, South Wigston.—VII. For the cheapest, neatest, and best super, for harvesting honey in the comb, 5*s.*, 2*s.* 6*d.* Four entries. First, W. P. Meadows, Syston; second, C. Redshaw, South Wigston.—VIII. For the best straw skep, with flat top and arrangements for sectional supering, 7*s.* 6*d.*, 5*s.* Five entries. First, C. Redshaw, South Wigston; second, E. C. Walton, Muskham.—IX. For the best collection of hives and bee-furniture, no two articles to be alike, 20*s.*, 15*s.*, 10*s.* Three entries. First, Abbott Brothers, Southall; second, C. Redshaw, South Wigston; third, W. P. Meadows, Syston.

MONMOUTHSHIRE BEE-KEEPERS' ASSOCIATION.

The above Association held their annual show this year on August 5th, at Maindee, in connexion with the flower show of Christchurch Horticultural Society. Prizes were offered for appliances and honey. Notwithstanding the bad season, there was a capital show of honey, both in 1-lb. sections and in 1-lb. bottles; in fact, for quality and quantity, it was the most successful show the Association has held.

Mr. W. Williams, Caerleon, carried off the first prize and the silver medal, and the Rev. Mr. Salisbury took the bronze for extracted honey. Mr. R. Gittings took the honours in the cottagers' class. The bee-tent was pitched, and Mr. Meadham, the expert, gave an exhibition of driving and transferring into a bar-frame hive, the tent being crowded. Below will be found the full prize list:—

Class 1.—Best collection of bee furniture: 1st prize, 1*l.*, Mr. Meedham. Class 2.—Most complete hive, cost not to exceed 10*s.*: 1st prize, Mr. Meedham; 2nd, W. Edmonds; 3rd, J. Duckett. Class 3.—Best smoker, cost not to exceed 1*s.* 6*d.*: 1st prize, 10*s.*, J. Duckett. Class 4.—Best and cheapest straw hive, suitable for supering: 1st prize, 5*s.*, William Cox; 2nd, 2*s.* 6*d.*, Mr. Meedham. Class 5.—Best exhibition of super honey taken from one apiary: 1st prize, 10*s.* and silver medal of Association, W. Williams; 2nd, 7*s.* 6*d.*, General Gillipsie and A. Williams, divided. Class 6.—Best exhibition 24 lb. in 1-lb. bottles of honey: 1st prize, 10*s.*, Rev. C. T. Salisbury; 2nd, 7*s.* 6*d.*, General Gillipsie; 3rd, William Williams. Class 7.—Best super of honey in glass or wood: 1st prize, 10*s.*, Rev. J. Oakley; 2nd, 7*s.* 6*d.*, W. Jenkins, Class 8.—Best exhibition of comb-honey from one hive: 1st, 5*s.*, R. Gittings; 2nd, 3*s.* 6*d.*, W. Jenkins. Class 9.—For the best twelve bottles of honey, the exhibitor being a cottager within the county: 1st, 10*s.*, R. Gittings.

The prizes in the cottagers' class were given by Mr. Meedham, expert to the Association.

THE ST. IVES' SHOW.

The Hunts Bee-keepers' Association held their fourth annual show at St. Ives on August 5th. Prizes were offered in twelve classes, but except in some of the honey classes there was not much competition. The 12 1-lb. sections (that gained the silver medal: exhibited by Mr. T. Cook) were a very even lot, nicely sealed over without being plastered like some of the other sections exhibited, which had been left too long in the hives. The same exhibitor was successful with 2-lb. sections. The bronze medal was gained by Mr. Howard, jun., for 12 1-lb. bottles of run-honey, the natural order of things being reversed, the father being beaten by the son. The hives shown by Messrs. Howard were neatly made, serviceable, and economical; but the portable apiary exhibited by W. Brown, of Earith, was evidently invented by one who had had not much experience of the bar-frame hive, as there were several radical defects in its construction.

The bee tent arrived minus some of the necessary poles, so that it could not be properly pitched, but lectures were given by Messrs. White and Howard, and the principle of driving demonstrated. The following is a list of prizes:—

Bees.—Class I. Best specimen of foreign bees, exhibited with their queen, in a unicomb observatory hive: 1, T. Cook; 2, J. H. Howard, sen.—II. Best specimen of English bees, exhibited with their queen, in a unicomb observatory hive: 1, J. H. Howard, jun.; 2, J. H. Howard, sen.

Hives.—Class III. The cheapest and most serviceable

hive on the moveable-comb principle, for general use (price not to exceed, with super, 15s.): J. H. Howard, sen., and commended for another exhibit.—IV. The best and most complete doubling hive (price not to exceed 21s.): 1, J. H. Howard, sen., and commended for another exhibit.—V. The best straw skep with floor-board and arrangements for the storing of surplus honey: 1, J. H. Howard, sen.

Honey and Wax.—Class VI. Best exhibit of comb honey (not sectional): 1, C. N. White; 2, A. Childs; 3, J. H. Howard, sen.; 4, J. H. Howard, jun.—VII. Best 12 1-lb. sections of comb honey: 1, T. Cook; 2, J. H. Howard, jun.; 3, J. H. Howard, sen.—VIII. Best 12 2-lb. sections of comb honey: 1, T. Cook; 2, J. H. Howard, sen.; 3, J. H. Howard, jun.—IX. Best 12 1-lb. bottles of run-honey: 1, J. H. Howard, jun.; 2, J. H. Howard, sen.; 3, J. H. Howard, sen.—X. Best sample of bees' wax (in one cake, weighing not less than 3 lb.): 1, not awarded; 2, Rev. H. Gee.

Cottagers only.—Class XI. Best 12 1-lb. sections: 1, J. H. King; 2, B. Ball.—XII. Best 12 1-lb bottles of run-honey: 1, J. H. King; 2, B. Ball.

CLEWER BEE-KEEPERS' ASSOCIATION.

On August 2, the annual meeting of the above Association was held, in conjunction with the Clewer Horticultural Society, by the kind permission of Sir Daniel Gooch, Bart., in the grounds of Clewer Park, near Windsor. There was a very fair display of bees, honey, and appliances. Mr. W. H. Harris and Mr. G. Henderson were the judges.

The following is the list of awards:

Observatory hive: 1st prize, Mr. G. Cartland.—Hives and bee appliances: 1, Mr. A. D. Woodley; 2, Mr. W. Sevenoaks.—Best and cheapest hive: 1, Mr. A. D. Woodley; 2, Mr. W. Sevenoaks.—Best and neatest rack: 1, Mr. W. Sevenoaks.—Largest quantity of extracted honey: 1, Mr. Ranscombe; 2, Mr. Jackson.—Best twenty-one 1-lb. sections: 1, Rev. R. Errington; 2, Mr. Carter.—Best twelve 1-lb. sections: 1, Mr. Bacon; 2, Mr. Ranscombe.—Largest collection of run honey: 1, Mr. Bacon.—Best twelve pounds of run honey: 1, Mr. Jackson; 2, Mr. Gower.—Beeswax: 1, Mr. Cartland.

CALEDONIAN APIARIAN SOCIETY.

The thirteenth annual show of the above society was held in the show ground, under the auspices of the Highland and Agricultural Society. The weather was most favourable. The exhibitions, upwards of 150, were in some cases excellent, surpassing anything yet exhibited at any of the former shows. The quality and finish of some of the honey, however, betrayed the untoward season we have experienced, consequently the Argyllshire supers, previously taking first honours, were rather in the background. From Dumfriesshire, Wigtonshire, and Cumberland, where the temperature is higher, the bees have had a better time of it, and the honey from these quarters is, in some cases, splendid; in fact, superior to almost anything produced elsewhere. A number of designs were shown wrought out in honey-comb in the MacNallys' collection.

The collection of appliances was, as usual, numerous, brought from all parts of the bee-keeping world, many of them, however, being superfluous in the apiary. The inventions were not considered worthy of first prize, neither were the honey-pressers for heather honey. The exhibits of several good things entered were not forwarded in time. The hives were numerous, Mr. MacNally's taking first prize for a rather good but cheap hive. Eclipsing anything of that kind, however, was the exhibit of Messrs. Warnock and Walker, Blantyre.

The floral display, nearly one thousand specimens, together with seeds of the same, and a written description accompanying the exhibit of Mr. E. MacNally, of Rutherglen, was especially interesting, and showed to perfection the time of flowering, their use as honey-producing plants, as well as their use in field or garden. Some very pretty artificial flowers were exhibited by Mr. Wm. Thomson, Blantyre, contributor to *Journal of Horticulture*, London, and *Scottish Agricultural Gazette*, Edinburgh.

The success of the Society is entirely due to Major R. J. Bennett, Glasgow, honorary secretary and life member of the Society. From the untiring zeal of this gentleman to benefit the working classes in bee-husbandry is the result of this interesting bee and honey show, which every one should see.

IRISH BEE-KEEPERS' ASSOCIATION.

A committee meeting was held in Trinity College on Tuesday, July 27th, at one p.m., Dr. Knight presiding. Present: Drs. O'Farrell and M'Allen, the Rev. P. Kavanagh, Messrs. Chenevix, Sproule, Vanston, Edmondson, Read, and the honorary secretary.

The minutes of the last meeting were signed as amended, and other routine business transacted. The secretary reported that there had been six entries received from members for the Grand National Show—four for comb-honey and two for run-honey. The exhibits left Dublin for London on Saturday, 24th. The secretary having read the correspondence with a commission agent in Dublin, arranging for the sale of members' honey, a circular on the subject, already in print, was amended, and was desired to be issued to members at once. The honorary secretary reported that the Board of Works had refused to allow the bee tent to be erected in the Phœnix Park, unless a guarantee was given that no admittance fee was to be charged, but that arrangements had been made to erect the tent at Dunadry, county Antim, on the 29th, and at the Giants' Causeway on the 30th, the honorary secretary accompanying it to lecture and to manipulate.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1886, amounted to 6505*l*. [From a return supplied to E. H. Bellairs, Esq., Wingfield House, near Christchurch, by the Principal of H.M. Statistical Office.]

QUEEN INTRODUCTION.

[513.] 'Grinding Wheel,' in the first paragraph of his letter, No. 471, says that he aims as much as possible to be 'exactly correct,' which is very right and proper, and on that principle he should not in the third paragraph have given false colouring to my action in respect of the 'law' which I reported in a previous letter. I did not extract the honey from the hive I alluded to for the purpose of testing the law, it was the operation of extracting that showed me the queenless and broodless condition of the stock, and it was not until the next day that I read in the *Journal* the 'law'

which was so positively laid down, and which has raised the present controversy. It was the desire to give the full facts of the case that induced me to mention the extracting, and I cannot think that the operation could in any way lessen the value of the experiment with the queen, which was tried thirty hours afterwards. Again, why does he suggest that I put the queen at the end of the alighting board, a foot away from the flight-hole? The tenour of his letter throws doubt on my *bona fides*, which is to say the least of it not complimentary.

In the second paragraph of his letter, he comes to the conclusion that he knows a (mysterious) reason why I have formed a certain opinion, and asks me to explain why a stock of bees described by him to be, in the condition I consider the best for receiving queens by caging, killed two queens offered to them in pipe-cover cages, and afterwards accepted a queen offered to them in another way when they were in a totally different condition? My answer is that I cannot tell, for he does not give the time of caging, nor does he say whether the queens were killed in the cage or afterwards. May I ask him, if he has such faith in the running-in system, why he used the cage at all with such valuable queens? and why does he use it every spring if it is not because queens are scarce and valuable and he is afraid to risk them by the running-in plan? I presume 'Grinding Wheel' always adopts the system or method in which he has the greatest faith, and from his statements it is sometimes one and sometimes another. I, on the contrary adhere to the method in which I have the most faith, and do not advise any other, and that is my offence in the eyes of those who claim that there is only one safe way, and that is theirs.

Mr. Mellin again (No. 473) introduced a queen by the Simmins' process and was so perfectly successful that he tried another 'Simmins' plan, with four others, and found one queen balled '*without knowing the reason.*' He then smoked and shook all the bees into a pool of scented syrup on the floor-board of the hive, threw the lately balled queen amongst them, and an hour and a half after found she had laid several dozens of eggs in the cells. After that who will try any other than the game of pool?

It is amusing to read of Mr. Mellin's caged queens flying off when released—Why did he use a queen-cage from which they could fly off? And when they did fly why did he not wait for them to come back again as all experienced bee-keepers would?

Does it never occur to queen introducers that it is the wretched pipe-cover cage, the earliest and crudest invention for the purpose, that is at the bottom of the failures in introductions by the caging process? Was there ever such an invention for tearing off queens' legs, and drowning them in the honey forced out of the cells when the cage is pressed home?

I will send you a drawing if agreeable of a cage on my principle that anyone can make for a penny or less, and perhaps that may dispose of the idea that the sale of such a thing is my reason for alluding to it.

It will perhaps be as 'balm in Gilead' to my respondents if I inform them that a queen ran into the flight-hole of a hive in which there was a fertile worker, on Friday last, though instantly balled, is now at liberty, and laying; and I *hope* will continue to do so.—C. N. Abbott, *Southall, July 31st.*

THE GOVERNMENT OF IRELAND AND THE STATISTICS OF BEE-KEEPING.

[514.] The Government seem at last to be about to recognise the position of bee-keeping as a national industry. A constable of the Royal Irish Constabulary has lately called on me to assist him in filling up a return regarding bees, hives, honey, and wax for 1885. The form has been issued by the Registrar General of Ireland, and no doubt when the enumerators have completed their reports it will be printed as part of the annual statistics of live stock and farm produce of Ireland. The former Co. Armagh Bee-keepers' Association and, latterly, the North-East of Ireland B. K. A., have compiled similar returns for several years, but they merely extended to our members. Of course the first year of this attempt of the Irish Executive will not be as complete as it might, but so far so good.—H. W. Lett, M.A., *Aghaderg Glebe, Loughbrickland, Co. Down, July 30th.*

APICULTURAL STATISTICS.

[515.] In making up my accounts for the year, and comparing them with last, I have found that a larger average would give a more satisfactory indication of the comparative yield of honey, perhaps give some data by which to estimate value in the market. If your readers think well to oblige me with post-card, addressed as below, with information as arranged at foot, I will tabulate it, and with your permission give result when obtained. Some little time ago you published the Excise returns of honey and wax as made in France. These were very amusing, but returns now sought will I trust be instructive.—Wm. B. Bragg, *Catherwood House, Market Harboro, 5th Aug.*

	1885.	1886.
Number of Hives (Skeps), May 1		
,, ,, ,, Aug. 12		
Number of Hives (Bar Frames), May 1 ...		
,, ,, ,, Aug. 12...		
Honey in Sections, lbs.		
,, Run, lbs.		

For reference only.]

*Name*_____

*Address*_____

FLY-CATCHERS AND BEES.

[516.] Unquestionably the fly-catcher is a great enemy of bees, perhaps more so than the tom-tit, although I have not been so much troubled with it as the latter, the bird being fairly scarce in this immediate neighbourhood, but I caught one in the season of 1884; and a friend of mine who has plenty of time on his hands to watch them, has seen the bird for hours together taking the bees, but being of a more humane disposition than myself never disturbed it. The depredation of the tom-tits is chiefly confined to spring, while the fly-catcher carries on his depredations through the entire season.—G. H. G., *Bromsgrove.*

FLY-CATCHER AND BEES.

[517.] As 'J. W. B.' wished to know if any other bee-keeper could tell any thing of fly-catchers and bees, I have known for a fact, that fly-catchers will catch live bees. In the summers of 1884 and 1885 which were dry, I never saw them at it, but the three or four wet summers before they gave me a deal of trouble, taking my bees right before my eyes, I never could do anything with them, for it pains me to see anything suffer and am very fond of the feathered tribe. This summer they have come again and are very busy at their cruel work.

On Sunday, July 11th, I was standing with a friend at my door, which opens into the garden. We watched one of these birds catching bee after bee; I thought I would stop this, but I could not find in my heart to do anything till Sunday morning, July 18th, when I saw one on the top of my garden house, catching the bees as they passed over. 'Well,' I said, 'Sunday morning as it is, I cannot stand this any longer;' so I set a trap. I knew the bird was in a tree above me, I never saw it

any more that day, but next morning it was mine. Then I saw a blue-tit with something on a berry-tree, I looked closer I found a handful of parts of bees, whether it got them alive or dead, I do not know. I have seen Mr. Blue catch the bees on the alighting-board, and to-day there are two fly-catchers very busy catching bees. —CHAS. SCOTT, *Catton.*

[There can be no doubt that both fly-catchers and tom-tits catch bees. The question is now, whether these bees are workers or drones. Will our correspondents kindly note this point?—ED.]

METAL ENDS.

[518.] Kindly allow me a few words in reply to Mr. Hooker's last remarks. Mr. Green's metal shoulders were, so far as I know, exhibited at the show of 1882, for the first time, not as a separate exhibit, but in a hive. At any rate, that was the first time I saw them. And as to their being the parents of metal ends, why there is no similarity whatever, they were simply strips of metal one-eighth inch thick let into notches cut in the sides of the top bars. Let any one compare any one of the numerous ends brought out subsequent to 1882 with mine and with Mr. Green's, and the likeness will prove the paternity.—F. LYON.

CARBOLIC ACID.

[519.] I have just made my first experiment with carbolic acid, in order to remove a super, and have been anything but successful. I made a square cage of iron gauze, inserted in it pieces of sponge saturated with the acid, and placed it inside my Bingham Smoker, then proceeded to drive the fumes into the super, at the top, but it produced not the slightest effect as far as I could see, for the bees rushed out as fast as they could from between the sections, and when after waiting a short time I removed the super, my hands, though perfumed with Calvert's No. 5, received more stings than they have enjoyed for a long time. I had on a veil or I should hardly have been able to see to write this; I am greatly disappointed, as I had looked forward to getting rid of the trouble of the smoker with the inconvenience of its frequent extinction.—J. COVE JONES, *Loxley, Warwick.*

Replies to Queries.

*** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[490.] *Carbolic Acid Fumigation.* (West Cornwall.)—Frightening bees with carbolic acid vapour is more effective if properly applied than smoke, in the case of straw skeps it is the same. I have frequently advised bee-keepers not to *pump* the fumes into the hive; but many do not seem satisfied unless they can 'go at' their smokers or fumigators as though they were pumpers on a fire-engine when the word is passed 'Down with her.' You simply want to breathe, if I may use the expression, with the fumigator at about the same rate as you breathe yourself, shifting it about to drive the bees back. The air passed out of a fumigator must be thoroughly impregnated with the carbolic acid vapour, and *must* pass over the sponge at least twice to be thoroughly effective. See answer to [417] page 296 of July 1. I have driven hundreds of straw skeps with the fumigator both in private and in the bee-tent, and have not used smoke in my own apiary for two seasons.—W. B. WEBSTER.

[491.] *Uniting Stocks.* (West Cornwall.)—If you 'bump' the hives, return each to its particular stand to collect the flying bees; then if your hive or box is large enough to contain four lots, shake each driven lot into it during the evening. You must be pretty sharp about it in order to get them all in the box before they 'boil over' the sides.—W. B. WEBSTER.

[492.] *Four colonies out of two.* (Honeysuckle.)—It is much too late in the season for such an operation. Remove the mother bee from the stock you wish to raise cells in; when they are nearly ripe, divide your colonies in the usual way, giving two cells to each requiring them. The reasons you ought to be able to understand from the foregoing.—W. B. WEBSTER.

[493.] *Waste Wax.* (Honeysuckle.)—When bad or old comb is cut away it is not utilised; but when it is quite new they do. Watch a lot comb-building, you will frequently see them cut a portion of the comb off and stick it on to another place, such for instance, as when they are forming fresh pop-holes, the cappings of brood cells are frequently used again.—W. B. WEBSTER.

[493.] *Waste Wax.*—I have reason to be believe that bees, when honey is scarce and weather warm, do occasionally use waste wax, the fact of their working foundation would show that they have the power to do so.—A. T. WILMOT.

[494.] *Comb from syrup.* (Honeysuckle.)—Yes, when you place a swarm in a hive, or in the case of driven bees.—W. B. WEBSTER.

[510.] *Feeding.* (Theta.)—1. When the honey flow ceases if they are deficient in stores and finished by end of September. 2. Six weeks before honey flow commences and finished then. Honey can be uncapped.—W. B. WEBSTER.

[511.] *Sections.* (Theta.)—This season being a bad one, you need not be surprised at swarms of this year not 'going up' in the sections. Remove them now, unless there is plenty of heather in your neighbourhood.—W. B. WEBSTER.

[512.] *Wintering.* (Theta.)—The death of your bees was not due to Mr. Cheshire's plan of putting frails on top of frames. You can leave the American cloth on. Reduce the number of frames to six, but see that the six have a sufficiency of stores; cut winter passages. There is no necessity to fill sides of hive if you keep your bees quite dry.—W. B. WEBSTER.

Echoes from the Hives.

Surbiton, Surrey, August 6th.—The past season has been a frightful one, continuous feeding till the 24th June, and cold and wet weather since the 14th of last month. I shall only have about 40 lbs. from four hives, which are swarms or have swarmed, though luckily I followed your directions on doubling, and put a stock of hybrids on to forty frames (four tiers); the queen appropriated twenty-five of them, so that now they are at their strongest, and I do not look forward to extracting their honey, though they have already given me over 100 lbs. of very fine quality and good colour. Don't I wish I had the same stock last year! You talk of lifting up a box of ten frames and putting another underneath as though it were the easiest thing possible, and seem to forget that the fourth box comes almost level with your neck, and the bees, finding their houses being pulled to pieces, pour out by the thousands just as you are lifting a weight of over 50 lbs. In my opinion the non-swarming system is far best in a bad year like the present, but the swarming one in a good year like the last.—J. A. C.

North Leicestershire, July 31st.—The bees are still at work, though not so hard as recently. They have forsaken the clover, which is about washed out, for the limes. There are still hopes of a few more sections.—E. B.

Plymstock, South Devon, July 30th.—The weather is provoking. Plenty of white clover about still, but hardly any sunshine, and weather too cold for bees to do much work. I cannot get my sections finished.—TREVOR SAYNOR.

Lismore, Aug. 2.—Many thanks for the reply to my query about re-queening by uniting a skep (with queen) to a queenless bar-frame hive. I think in a country where a lot of stray casts and swarms are always turning up, which can easily be put into skeps, it will not be a bad way of providing queens for hives that may require them. I asked the question in your *Journal* early in the summer, how best to provide extra queens for an apiary of the hives (now increased to twenty), and the answer suggests a method that would have involved disturbing my best hives already hard at work in two crates of supers, a risk I did not like to run, if indeed I had time

for the somewhat troublesome plan of raising from nuclei. I have an instinctive aversion to meddling with a busy, industrious colony, and in spite of all, with every possible deference to the great authority who, in last week's *Bee Journal*, says chilled brood cannot result in foul brood, I have seen the latter scourge break out so often after early spring manipulation, that I have made a rule that I will not open any hive before May, and not then even, unless the weather be really warm and genial. I have only had foul brood once (pronounced by your *Journal* to be foul brood), and that was in a hive that was manipulated early in the season. By a little peep under the quilt and a little watching at the door of the hive, it is very easy to know how affairs are progressing inside. I met with a signal defeat a couple of days ago. Bad weather set my hives at the moor swarming, and I went out to capture one fine swarm and return it. I went and saw, and I was fairly conquered. I had returned two swarms successfully already this season, and hoped I might succeed with this. But such furious bees as turned out of the parent hive I never beheld. Three got somehow inside my veil and stung my chin, so that I still have a small *goitre*. The others attacked my gloves, hat and clothes furiously. Patience, quiet, and the smoker, seemed of no avail; and, indeed, I found the hive so crowded, notwithstanding the issue of the swarm, that I thought it better to put on again two tiers of the sections, removing the third, and give the swarm (a very large one) a new hive. I do not think that riches and prosperity improve the disposition of bees. As long as this colony was poor, a child might have handled it. But once it got up in the world and 'riches increased,' it developed an evil temper. Since all the hives have become wealthy they have certainly become very unamiable, to put it mildly. I expect I shall have a rough time of it in removing sections. I tried the carbolic dodge with fair success. I did not burn my fingers, and the carbolic smell was enough in all conscience, but one hive seemed rather to like it. On a second hive it had better effect. This has been a wretched summer as far as weather went, and the limes gave little or no yield at first, owing to storms of wind and rain. Now they are doing better. But most of my hives have required three or four tiers of sections, and the best hive has barely room enough in five. I can't help thinking what should I have done if it had been a *good* season.—Irish Novice.

Berlin House, Donegal, August 6th.—There has been any amount of honey in this locality, but, sad to say, the poor bees have not had the weather to gather it. It has been a miserable season, with wet and cold. The last few days of June were fine, and the 1st and 2nd of July the thermometer registered 130° and 120° in the sun, and continued fine up to the 7th, and with the exception of an odd day, has been wet and cold up to date, and no appearance of any change for the better to-day. I hope to get some honey from the heather, as it is not all out in bloom yet, provided the weather becomes favourable, but can hardly expect much. It has been a fearful year for the old queens, virgin queens having killed them, and then swarmed. I have lost several, and some valuable ones, all owing to the bad weather. I have had young queens out of cell, in nuclei, for thirty days before they were mated or commenced to lay. I saw one queen go out on the afternoon of the 23rd ult. and only remained out about four minutes, and came back mated. I looked into nuclei on the morning of 26th ult., and found she had laid well, so she did not lose much time, although she was out of cell in nuclei about twenty days.—G. T.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Beeswing.—*Queens, young and old.*—The probability is that the young queen, being more active and lively than the old one, would be the victor in the royal fights. The one forwarded by you is the old queen.

A Disappointed Bee-Keeper.—*Tiering Sections.*—Our advice is that when a strong colony is working well in sections, and honey coming in plentifully, as soon as the sections are about half filled, raise the racks and place a second one beneath it. The work will be carried on in both racks, and both will be filled in nearly the same time as one. These conditions, however, were not observed in your case; there was a cessation in the income of honey, the weather was cold and wet, and the bees, finding that through the hatching of bees, &c., there were many cells vacant, busied themselves in emptying the sections, and carrying the honey down to the body-hive. The above suggested plan is found to answer with most apiarians, and the Americans almost universally practise it, but cold and showery weather will occasion some deviation from it.

Land's End.—*Earwigs.*—Earwigs are not very agreeable neighbours to bees, but we never heard of their doing any damage to them. They are gifted with wings, and therefore there is difficulty in keeping them out of the hive. They resort to it chiefly for warmth. The best remedy against earwigs is to have close-fitting hives, and to keep the stocks strong. See reply to 'Beacon.'

Beacon.—*Earwigs.*—See reply to 'Land's End.' Newman, in his *Introduction to the History of Insects*, says: 'The shape of these wings (the hind ones), when fully opened, is nearly that of the human ear, and from this circumstance it seems highly probable that the original name of this insect was *earwing*.' In the economy of nature the earwig is of service, as it destroys multitudes of smaller insects, as *thrips*, *aphis*, &c.

John Bradley.—Place yourself in communication with the secretary of your county Association. He will inform you as to the proper time when, and the place where, the examination will be held. There is nothing formidable in a third-class examination. You are not required to write or to speak on bee-keeping, merely to show that you have a fair knowledge of the management of bees.

W. E. H.—*Sea Rocket.*—The popular name of the enclosed Cruciferous plant is Sea Rocket (*Cakile maritima*). It is an annual, and grows abundantly on sandy shores. In common with many members of the natural order *Cruciferæ*, the Sea Rocket secretes a fair amount of honey. Its distribution may be easily extended by gathering the two seeded pods and planting them in the sand at intervals of a few yards.

J. P.—1. *Heather or Ling.*—Heather is often applied to all species of British heaths. The most common species (*Calluna vulgaris*) is known in England by the name of Ling, and in Scotland it is called Heather. 2. *Honey-yielding Heather.—Calluna vulgaris* is the best of all British heaths for honey secretion. 3. *Name of enclosed Species.—Calluna vulgaris*, Ling, or Heather. 4. *Amount of Honey yielded.*—Given a populous colony, favourable weather, and a good range of heather, from two to three pounds per day may be easily gathered by one stock. 5. *Moving a quarter of a mile.*—No necessity to move your bees any nearer.

Col. and L. G. will find in the above replies to their queries.

W. H. A.—1. Five or six pounds of driven bees. 2. About twenty-five pounds. 3. The entrance would supply the bees with sufficient ventilation. 4. Use the enamelled quilt for winter covering.

E. Tully.—Our advice would be to introduce the queen by a Raynor or an Abbott cage.

Novice.—1. Try carbolic acid at the entrance. 2. Take the super to a darkened room, the bees will fly to the light: or if you use a narrow coiled roll of perforated zinc about 12 inches, and cover over the top of the frames, the bees will pop out, but they will be unable to return. This is a very easy method of emptying supers of bees.

E. N.—Five or six pounds of driven bees will form a colony.

H. A. Broome.—The conditions for sending queen and bees abroad are, that they should have a supply of water, a sufficiency of sealed honey, good ventilation, a position where they can get air and protection from rough weather. Dr. Stroud, of Port Elizabeth, Cape Colony, is an authority on South African bees, and might be consulted on the bee-pasturage of the district selected.

H. E. S.—The comb is old and musty, and it would be advisable to change it. It is not foul-broody, but it has an unpleasant odour.

Asp.—1. *White Grubs carried out.*—It seems that these were drone grubs, and that the drones which you saw flying were being driven out. They are not actually killed by the bee. 2. *Sections built on but not filled.*—As you are close to heather, you may get them filled even now. Do not put another crate in until the first lot are being filled and sealed.

Nucleus.—*Month for Queen-raising.*—May or June, because that is the natural season for the operation. 2. *Replacing Queens.*—Queens are in full profit in their second year, and it is as well to replace them before the end of their third year. Some queens, however, are good and profitable even in the fourth year, the nature and strength of the stock should be your guide. 3. *Extracting from stock which has swarmed.*—Fourteen days after swarming is a good time. The young queen will then be fertilised and beginning to lay, and by relieving the combs of the honey deposited in them as the brood has hatched out you give her room. If you wait until the twenty-one days there will be some brood unsealed which may be injured. If bad weather comes on you must feed of course. 4. *Queen not hatched fourteen days after sealing.*—She is most likely dead in the cell. The brood which you found unsealed fourteen days after swarming was, we should think, dead, having probably been chilled. 5. *Queen laying drone eggs in worker-cells.*—She is certainly unfertilised in spite of what you saw, or she may be injured in her organs. 6. *Sections.*—You may remove them as finished if the honey season is declining, or you may place another rack under them. You will get them more thickly sealed, which, although not so nice-looking, is an advantage for commercial purposes, very thinly sealed sections being apt to 'weep.' 7. *Depth of hives from various makers.*—They should be all of one depth, and the dividers interchangeable. The cause is probably the use of unseasoned wood for the hive sides, in the case of that in which the dummy rests on the floor, the shrinkage of the sides having caused them to be no longer of the proper depth.

Derbyshire.—*Building up Stock and Swarm.*—Commence to feed gently when the honey no longer comes in freely and give a frame of foundation, or comb if you have it, in the centre of each. At the end of a week give another frame. When each lot has eight frames feed more rapidly until they have the four outside combs filled and sealed, and the other four partly filled and sealed, this should be completed by the end of September. From your description they seem at present to be too weak to extract from, and moreover you may injure the brood in doing so.

W. H. A.—*Condemned Bees.*—You will find the treatment of these fully described in our columns pp. 275-6, Vol. XII., and pp. 311, 312, Vol. XIII.

J. A. C.—*Poppies and Thistles.*—These flowers are much visited by bees, and they gather honey from them. Some writers say that the honey from poppies makes the bees averse to work.

W. M. L. C.—*Lime or Linden-tree.*—The botanical name of the common lime is *Tilia Europæa*, or *T. intermedia*. We have also in England, among others, the small-leaved (*T. parviflora*) and the broad-leaved (*T. grandiflora*) limes. Planted singly, it blooms in about six years, and it is said to live over two hundred years. It flowers in July, and these flowers last about twenty days; their fragrance, though powerful, is delicious, and so is the honey it yields. 2. A lime-tree could be procured from any nursery garden. 3. *Candy-cake.*—Consult Cowan's *Bee-keepers' Guide*, p. 152. 4. *Preventing Swarms.*—The same book, p. 15. 5. *Number of Frames in Winter.*—As many as can be covered by the bees.

J. P. Allen.—*Foul Brood.*—The small piece of comb furnished no indications of foul brood. We are inclined to say that the death of the brood was the result of the phenolated syrup, and other remedial agents you employed.

J. Richardson.—After the introduction of your queen it would have been desirable to have ascertained the reception she met with. It is most probable that the unusual commotion of the bees resulted from the queen having been balled or encased.

S. L. B. writes:—'Would the editor kindly ascertain for me the name of the enclosed? It came to me this morning from a friend in Dublin, with only the following note: "There is a bed of the enclosed plant here, so swarming with bees of all sorts until 9 p.m., and I don't know how much later, that I am sure it must be full of honey."'—The name of the flower enclosed is *Stachys lanata*.

A correspondent asks: Can any one tell me the quantity of sugar required for a swarm of bees to build out with comb, say ten standard frames fitted with thin foundation starters only? and how early or late in the year could it be done?

Pelham Foundation.—I should very much like to see a full expression of opinion as to Pelham foundation for brood-nest. Meadows strongly recommends it, and so, I see, do Simmins and C. N. White. In what way is it better than Dunham?

A correspondent requires the name of a firm from whom earthen jars for honey could be procured.

Correction.—In line 3, column 1, page 362, of last number, *for* 'more,' &c., *read* 'never completely filled.'

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

August 12.—Taunton Flower Show. Entries close August 9th. Hon. Secretary, E. S. Hammond, 67 High Street, Taunton.

Aug. 31 and Sept. 1.—Warwickshire at Nuneaton. Entries close August 21. Hon. Secretary, J. N. Bower, Knowle.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

Aug. 18.—Farnborough.

STAFFORDSHIRE COUNTY BEE-KEEPERS' ASSOCIATION.

August 17, 18.—Bilston Flower Show.

August 19.—Brenwood Flower Show.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

THE
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Editorial, Notices, &c.

BEE-KEEPING AMONGST THE YOUNG.

The Conferences held at the Indian and Colonial Exhibition, in connexion with the South Kensington Show, have produced papers from some of our most advanced bee-keepers which, when the circumstances of the Show have faded from the memory, will leave a lasting effect on the mind of the bee-keeping world. Six papers on important subjects were read; and when these have passed through our columns they will be published in a separate form, so that all bee-keepers may have ready access to them.

On the first day three papers were read: the first by Mr. T. W. Cowan, on the 'Development of Bee-keeping as an Industry;' the second by the Rev. G. Raynor on 'Queen-Introduction;' and the third by the Rev. F. G. Jenyns 'On the Promotion of Bee-keeping amongst the Young.' To this last paper we attach a special importance, it being, as it were, a new departure, as we have not hitherto attempted to imbue the younger members of our families with a love of apiculture.

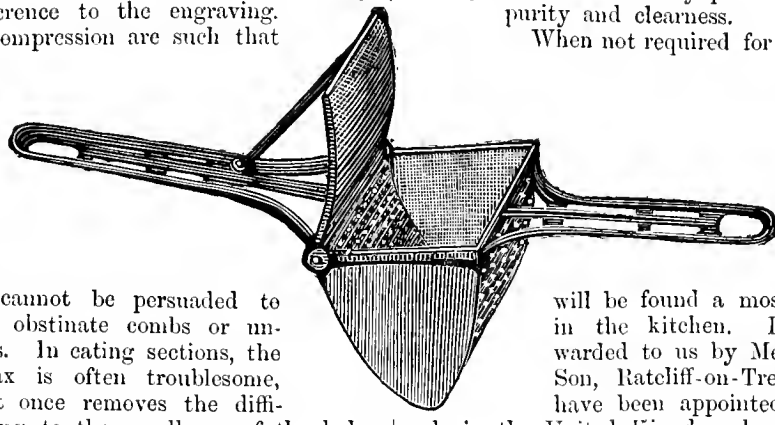
Our reasons are many for directing particular attention to the subject of calling out the interest of our young people towards bee-keeping. Among them we may mention, first, the advantage of affording special occupation for leisure hours. And under this head we have in mind not simply the actual operations and manipulations immediately connected with the bees, but the making of the hives by boys mechanically inclined and who have appliances and tools. Secondly, the moral improvement which is sure to follow care and attention bestowed on any creatures of God. Those who have had much to do with boys, and who know their strong propensities to kill, if not still worse to torture, insects and other living things, will recognise the immense importance of the refining influence of bee-keeping on the moral nature. The lad who will wantonly give pain to a cockchafer or a butterfly or a fly will most likely be a bully to his schoolfellows, a tease and annoyance to his sisters, and may easily become tyrannical and inconsiderate as a man. But we believe every youth who learns to love his bees will grow up a veritable 'Uncle Toby' in the school, the home, and the neighbourhood in which he lives. Thirdly, we who are advancing in life will soon need successors in our favourite pursuit, and if we would largely extend apiculture in our generation and the next, it is to the young we must chiefly look to take up the industry. We might further suggest that a lad skilled in bee-keeping and whose heart was in the matter would frequently be more able than his elders to make impression on cottagers and persuade them into better methods than the straw skep and the sulphur fumes. Many a man whose 'father and grandfather kept bees' before him, and who consequently thinks he has inherited the lore of generations, but who is as ignorant of advanced principles of apiculture as he is obstinate in adhering to old ways, would not be above receiving suggestions and instructions from a bright lad whom he could all the while seem to patronise.

But now comes the important practical point, How are we to get at the boys and girls? They do not read—at least in large numbers, the *Bee Journal*. They do not attend our Conferences. They do not often buy books on bee-keeping. Well, we have three suggestions to make on this matter. First, let skilled apiarians give lectures well illustrated with diagrams and hives, &c. in schools, public and private, elementary and advanced, lower class, middle class, and high-class, wherever an opportunity offers or can be secured. Secondly, let us have in a cheap and attractive form a small book on bee-keeping written specially for the young. Thirdly, and we lay particular stress on this, everything possible should be done to interest schoolmasters and *schoolmistresses* in bee-keeping. For this purpose some pains should be taken to urge the subject in conversation, and to point out the beneficial results accruing to the young from having so good a hobby. Then, also, a leaflet might be issued under the auspices of the B. B. K. A. showing what requires doing in this country to encourage apiculture, and directing the attention of teachers to what has already been done in this respect in Germany and in Switzerland.

We commend the whole subject to the notice and thought of our readers, in the assurance that there must be many among them who can help in working out these suggestions towards promoting bee-keeping by boys and girls; and we shall be much pleased if, by appropriating a column of the *Bee Journal*, we can render any assistance in furthering the object of Mr. Jenyns' interesting paper.

THE PATENT HONEY SQUEEZER.

The action of this honey squeezer will be readily seen by a reference to the engraving. Its powers of compression are such that it will cause every drop of honey to exude from any kind of comb. It will prove of service in extracting heather honey, or honey which cannot be persuaded to run out from obstinate combs or unfinished sections. In cating sections, the presence of wax is often troublesome, the squeezer at once removes the difficulty. According to the smallness of the holes through which the honey percolates, will be its purity and clearness.



When not required for honey purposes, it can be used for many culinary purposes, such as mashing potatoes, straining fruits, vegetables, beef-tea, &c. It will be found a most handy utensil in the kitchen. It has been forwarded to us by Messrs. Turner and Son, Ratcliff-on-Trent, Notts., who have been appointed agents for its sale in the United Kingdom by the inventor.

THE READING SHOW.

By the time our next issue is in the hands of our readers another Annual County Show will have been held, viz., the Berkshire, at Reading, on Aug. 26th. In looking through the schedule we are very much struck with its comprehensiveness. The classes number thirty-seven, and embrace almost every feature of the bee-keeping industry; upwards of 50*l.* are offered in prizes. This year the Association has secured special advantages. With the kind permission of the Mayor they have obtained permission to use the Old Historical Abbey Ruins, which lend themselves so admirably to a show of this description. There will be no lack of attractions, and we trust our bee-keeping friends will make it convenient to pay this show a visit. (See Advertisement.)

THE CONFERENCE.

(*Saturday, July 31st.*)

THIRD PAPER.

THE PROMOTION OF BEE-KEEPING AMONGST THE YOUNG.

By Rev. F. G. Jenyns.

With the many deeply interesting subjects connected with bee-keeping pressing for consideration, and with many problems yet to be solved, it may be thought a waste of precious time to consider the promotion of bee-keeping amongst the young. And yet it is indeed an important subject. Although in one sense about children, it is no childish matter.

Bee-keeping of late years, as we all know, has made vast strides, and from being a most insignificant source of income to a very few, has become a national industry, giving employment to thousands, and furnishing a new and excellent food supply to the country. But while this is the case, I am sure we must be conscious—and feel disappointed when we think of it—that least progress has been made in just that portion of the field where we could have wished to see the greatest advance, namely, amongst the bee-keepers of the working classes, amongst whom waste and improvidence are as rampant as ever, and amongst whom are tens of thousands who, as yet, know nothing of the source of interest and profit within their reach.

Why this is, and how it can he remedied, are surely interesting subjects for thought and discussion. And what I would suggest, in the first place, is whether we, who desire to see hee-keeping greatly increase amongst them, have not, in some measure, begun at the wrong end, or rather confined our efforts too much in one direction—whether, in order to get the fruit we want, we have not by our Associations, shows, and elaborate organizations, been giving all our care to bend into shape the old boughs of our tree, stiffened by the prejudices of age, instead of nurturing the young plant, and training its boughs in its tender age.

We all know how difficult it is to hreak through any prejudices whatever of long standing. We have found it so especially with the prejudices of old-fashioned bee-keeping. We have laboured to teach—to show the better way—but still, after we think we have proved our point, find ourselves no nearer the end, and the old-fashioned stick to old-fashioned ways, and are still bee-destroyers instead of bee-keepers.

Well, but if so, what then? By no means let us give in, hut rather persevere all the more, trying by all means, but with all considerateness, to break down these stubborn prejudices—the growth of ages. But while we do this, may we not do well to think—more than we have done hitherto—of the young, and to try to teach them what hee-keeping really is, and really may be made, before these prejudices exist in their minds, or, at least, have taken root? It is hard to teach in the face of prejudice. It is comparatively easy when the mind is young and open to first impressions. This is the point I would emphasize, and especially as there is nothing in hee-keeping, in a small way, which is not possible for the young of either sex to do. All the ordinary manipulations usually necessary are quite within their power.

But I go further, and say that it is desirable to teach hee-keeping to the young not only to make them bee-keepers in the future, but also because of the educational value of the subject. Some little time back I had the privilege of speaking of this, and so will not now dwell upon it, but would only repeat what we may well keep in mind, that bee-keeping, the study of bees—their nature, habits, and instincts—*is educational* in the best sense, cultivating in the young habits of observation, love of nature, and inducing thought and reasoning, and leading, above all, to the contemplation of Eternal Wisdom.

But, then, how can we best promote this bee-keeping amongst the young? Can it be done in our schools? And I think the answer to this is, It *might* be, just as it is taught in the schools of Germany and Switzerland: but it is very unlikely that it *ever will* be. It is indeed taught in some degree in a very few country schools, but more through the personal interest of the master than by encouragement from the authorities. Whether it is taught, and, if so, how far taught, in the schools of our Colonies, which in many things, as evidence is around us, show the way to the old country, it will be most interesting for us to hear.

But, however it is in our Colonies, we, in this country,

must not wait for its becoming a subject of regular instruction in our schools, for they are too much bound in the chains of red tape to admit of it. And in our schools there is the fatal obstacle of the system of Government grants depending upon results in certain fixed subjects, and, in too many schools, the teacher's salary made dependent upon these results, so that it is his interest to teach that which pays best; and until this system is greatly modified we must not expect bee-keeping to be a regular school subject.

But if not in our schools, what can be done outside? Well, first let us remember that a little practical teaching will do quite as much, if not more, than books. And so I would advocate special means being adopted for this end. In the time I now have I can only offer a few suggestions.

I. First, I think something might be done through the experts, who visit parish after parish through the land. We know the great value of their visits, how they stimulate many to begin, how they help those who have begun, and in many cases prevent loss and disappointment. These visits are carefully arranged, notice being given of them. I do not see why, when an expert visits a parish, he could not, at least in some cases, give a lesson to the young, gathered together for that purpose. I am sure that funds would generally be forthcoming for the purpose. Only I would say, pray do not let such a lesson consist of driving and little else (I wish 'driving' were driven out of bee-tents), as if driving were the end and object of bee-keeping, but rather simple instruction on the first elements of bee life and instincts, and the utilization of our knowledge of these principles by means of the frame-hive.

II. Again I am sure that in many places there are those, who, although not experts, might well, and would willingly do so, if it were suggested to them—gather a few elder scholars and others, after school hours on a summer's evening into their own gardens and apiaries, and explain to them some of the simpler things belonging to the art, and show them how to manipulate a hive; in short, put them in the way and encourage them to try for themselves. And this would cost nothing beyond the time given, and which I am sure would be given willingly by those who have at heart the interests of their young neighbours.

III. Thirdly, I would advocate special prizes at small local shows for young bee-keepers' prizes for honey gathered by their own bees. It may be said that it would be impossible to avoid imposition, but I do not see this. I enter into no details, but I can quite conceive conditions which would practically fence out imposition. It certainly *is* done with wild flowers and other floral exhibits, for which at flower shows prizes are frequently offered for the young. It is certainly done with needlework not only worked at school but at home. And it is certainly done with advantage through many papers and magazines, in which are often offered prizes for answers, for questions, or for essays done by the young.

And then there might be prizes, if not for hives, yet for supers, smokers, and such things made by young hands. I know that it is said that all these must be so inferior as to be practically useless and disappointing; but, even if so sometimes, you gain much by stimulating handiwork and the thought necessary for it. I remember seeing at Hertford a very good hive made entirely by a young boy. It was entered for competition amongst hives of experienced amateurs, and so of course failed to get a prize, doubtless to the discouragement of the boy. I remember well his face of disappointment. How greatly would he have been *encouraged* if there had been one or two classes for the young!

IV. Again I would advocate for the young what I have often advocated for adults—the inspection, and when deserving, the reward of well-managed apiaries, inspected as they stand in the cottage garden. I can imagine a system organized, by which young bee-keepers might be entitled to a special prize, or, if you like to call them so, rewards for a well-managed hive at home, inspected at home; and for efficient manipulation done under the eye of the appointed judge, expert, or visitor. And then such as passed might be put into a first, second, or third class.

V. And once more, much might be done, if we might venture to hope for its co-operation, through the columns of the *Bee Journal*. How much would be done, if in that most excellent paper a column could be devoted to the young, telling them just the simplest things in the simplest language. And it would be well if besides ordinary guide-books there were leaflets for them specially, for we must bear in mind that some of the books and papers which we read, treating, as they do, amidst practical directions of management, of some of the wonders of the physiology of bee-life and its propagation—are hardly fit to be put into the hands of the young.

But I must not dwell longer. I merely offer these few suggestions for what they are worth; but feeling that whether the suggestions are practical or not, the subject is an important one, and that by these or kindred means, if we have at heart the interest of bee-keeping amongst the working classes, we shall do well to sow the early seed which may afterwards bear fruit, and lead to intelligent and profitable bee-keeping on a much larger scale, and in a much wider field, than we have seen hitherto.

Discussion.

The Rev. Dr. Bartrum said it would be ungrateful on their part not to acknowledge the merit of Mr. Jenyns' paper. He trusted that gentleman would live to see many of his own suggestions carried into effect. Although in this country they were advanced in the education of the head they were terribly backward in the education of the hand. On the Continent technical education was considered most important, so much so that in France attendance at school on Sundays was insisted on so that time might be devoted to this study. Both in Germany and Switzerland technical education was far in advance of what it was in England. He was sorry to say, in their own country the matter was much neglected—in fact, so little did they think of technical education, that English children were given a whole holiday on Saturdays. In Prussia and some parts of Germany no man can hold the post of schoolmaster unless he had passed an examination in practical bee-keeping. He thought something of the kind might be done in England. He looked forward to the time when all school children should receive some instruction in bee-keeping as part of their scholastic routine. They ought to try and make the Government insist on the instruction of the students of the training colleges in bee-keeping. There were other ways also of promoting youthful interest in the subject. A common way of enlisting the interest of young people was by giving them something nice to eat, and it would not be a bad idea for bee-keepers to make presents of honey to young people with whom they were acquainted; because such gifts would no doubt be appreciated and cause the recipients to become interested in bee culture. When once that interest had been excited, it could be further stimulated by showing the hives and explaining their manipulation and management. An example of that kind had come under his own personal notice. He had had the company, at his own house, of an examiner in the Science and Art Department, who was astonished that the interior of a hive could be taken out and the bees at their work exposed to view. On seeing that he became greatly interested, and when last visiting his (the speaker's) house the gentleman referred to was most anxious that the same explanation and manipulation should be gone through a second time to satisfy his curiosity. One point they must be most careful about, and that was to take care to prevent their young friends from getting stung, because the pain resulting therefrom would no doubt very soon damp the ardour of youthful enterprise. Proper precautions might be taken by the wearing of a skull-cap and a veil.

Mr. Harris thought Mr. Jenyns' object might be greatly promoted if an effort were made to induce schoolmasters themselves to keep bees. A large number of young people were away from home at boarding-school when the bees were at their best. From long experience as a schoolmaster and bee-keeper he was of opinion that if masters would only take the trouble to talk to their boys

on the subject they would soon be able to stir up an interest in it, and promote a desire for a better acquaintance therewith.

Mr. Garratt pointed out the advantage which would accrue to the bees by the education of the young in the manner suggested by Mr. Jenyns. There was no doubt that bees suffered much at the hands of grown-up bee-keepers who had not been educated in precise modes of thought and judgment.

Mr. Sclater said a good deal was being done in elementary schools in the direction advocated by Mr. Jenyns. He was not aware that a cheap reading-book had been brought out, but the question of bee-keeping was finding a place in the elementary school reading-books. He thought that schoolmasters as a class were behind in the matter of bee-keeping. As regarded teaching the subject to children, there were difficulties in the way. They must bear in mind that the children did not belong to the schoolmaster. Many of them were of a lively, excitable disposition, which rendered it dangerous to take them near the hives. The effects of stings were different on different people, and serious results had been known. Something might be done by giving lessons in bee-keeping in what was called object lesson time, when it was the custom for teachers to give instruction by talking about any common object. Those occasions would be very suitable for the purpose. He thought they could never hope that the Government would give a special grant for the teaching of bee-keeping.

Mr. Davis said he had eight boys, and that six out of the number were lovers of bees. One had made a hive with a very few tools. They certainly had a great desire to possess bees. He thought it would be very desirable if some encouragement could be held out to boys of ten, twelve, and thirteen years, to induce them to possess bees. His own lads could handle frames better than he could, but if each had a hive of his own he would take far greater interest in the subject than at present. He hoped the Association could find out some way of helping young people to the possession of hives.

The Chairman said he was entirely in accord with the views of Mr. Jenyns and Dr. Bartrum. There was no doubt the matter ought to be brought before the notice of schoolmasters. He was glad to hear to-day that there were some schoolmasters who set the example of interesting their young people about bees. He knew Dr. Bartrum did so frequently. With regard to reading-books they had a reading-book for young people, which was cheap considering the amount of information in it, and Mr. Jenyns had kindly promised that his book should be published very shortly in a cheap form. The Committee had likewise had it under consideration to write chapters for elementary school books, and perhaps some of those chapters to which Mr. Sclater alluded may have originated from the British Bee-keepers' Associations. Object-lessons were very good as carried out on the Continent. In Switzerland, very much was done by object-lessons, in which diagrams were shown; and it was a common thing for schoolmasters to take the children out with them and let them see the hives, and the bees at work, at the same time giving interesting explanations concerning bee-culture. This method of teaching combined healthful exercise with the education of the eye and hand. He thought in this country children were worked too much in-doors. In conclusion, he thanked the audience for their kind attention, and moved a vote of thanks to Mr. Raynor and Mr. Jenyns for their interesting papers.

Dr. Bartrum seconded the motion, and said they were also deeply indebted to the Chairman for his valuable paper.

The resolution having been carried unanimously, the Rev. F. G. Jenyns expressed his acknowledgments to the audience for their kindness in listening to his remarks, and congratulated them on the rapid strides their cause was making, of which the grand show then being held was a pleasing evidence. They must look upon it as an encouragement to further effort.

The Chairman then spoke a few words of thanks, and the proceedings terminated.

ASSOCIATIONS.

TAUNTON BRANCH OF THE SOMERSET BEE-KEEPERS' ASSOCIATION.

On August 12th the annual meeting of the above branch was held in conjunction with the Taunton Deane Horticultural Society, in Vivary Park, Taunton. There were two tents set apart for this exhibition, which attracted an immense number of people during the day to witness this very interesting show. The following is the prize list:—

Class I. Largest and best super or supers of honey, from one stock of bees, in wood or wood in combination with glass or straw: Mr. G. Hallett, Otterhampton, Bridgwater.—II. Best glass super of honey: 1, Mr. C. Jewell, Bridgwater; 2, F. Jewell, Bridgwater.—III. Best exhibition of sectional super honey: 1, Rev. C. G. Anderson, Otterhampton Rectory, Bridgwater; 2, Rev. H. F. Gurney, Stoke St. Gregory; 3, Mr. G. Hallett.—IV. Best straw super of honey: 1, Mr. James Taylor, Hillfarrence; 2, Mr. E. Cattle, Hillfarrence.—V. Best exhibition of run or extracted honey in glasses: 1, Rev. H. F. S. Gurney; 2, Mr. J. Seldom, Umberleigh, Barnstaple; 3, Mr. G. Hallett.—VI. Best piece of bees-wax: 1, Mr. E. Cattle; 2, Rev. H. F. S. Gurney.—VII. Best and most complete collection of hives and bee-keeping appliances: 1, Mr. S. J. Baldwin, Bromley, Kent. Collection of honey: 1, Mr. G. Hallett; 2, Mr. J. Seldom; 3, Mr. W. Warren.—VIII. Best observatory hive (a complete stock of living bees), all combs to be visible on both sides: 1, Mr. S. J. Baldwin; 2, Rev. C. G. Anderson.

Judges: Rev. C. G. Anderson, Otterhampton, Bridgwater, and Mr. C. Tite, of Wellington.

DEVON AND EXETER BEE-KEEPERS' ASSOCIATION.

The County Show of this Association was held on Bank Holiday August 2nd, 1886, at Lynton, in one of the most lovely spots that could possibly be selected. The weather was perfect, and the whole surroundings were of the most charming character. The exhibition was held in conjunction with that of the Lynton Horticultural Society, and the spot selected for the joint display was in the grounds of Mrs. Lock-Roe, well known to visitors in North Devon. The site is close to the seashore, near to which were riding at anchor no less than five excursion steamers, which had brought visitors to the Show. In rear, rose the picturesque cliffs, with the valley between them, all of which form so perfect a landscape, unique even in Devon.

This was the first time that Lynton has been visited by the Association, and it certainly is not likely to be the last. Mr. Moore, the indefatigable secretary of the Horticultural Society, gave most valuable help in forwarding the preliminary arrangements, and in providing the necessary staging for the Show. The manipulating tent of the Bee-keepers' Association was pitched near the tent for the exhibits, and was visited by a very large number of persons. The manipulations were conducted by Mr. Baldwin, expert-in-chief of the British Bee-keepers' Association, and they lasted from 3 p.m. till past eight, the expert being constantly at work nearly the whole time. The tent was, as usual, in charge of Mr. Carter.

The judges were the President of the Association, W. Horton Ellis, Esq., J.P., and J. Thacker, Esq., of Heathlands, Ottery St. Mary; the Rev. Dr. Dangar was present to conduct the proceedings.

At the luncheon, given by the committee of the Lynton Horticultural Society, success was proposed to the bee-

keepers, and the chairman, Major Hunter, assured the Association that scientific bee-keeping would be gladly welcomed in that part of Devon.

The prize list is as follows:—Mr. A. Smyth for the best twelve 1-lb sections of comb honey, 1; Mr. May and Mr. E. Butt (Barnstaple) first and second for 2-lb. sections, A. Smyth first and second for best super of comb honey, Mr. Baldwin and Mr. E. Butt first and second for the most perfect bar-frame hive, Mr. Skinner and Mr. Baldwin first and second ditto for cottagers, Mr. Baldwin first for best observatory hive, Mr. Delbridge first for twelve sections of comb honey not exceeding 2 lb., Mr. Antell and Mr. A. Delbridge equal second for ditto. Mr. J. Seldon (Umberleigh) first for run or extracted honey, Mr. Baldwin and Mr. Butt first and second for collection of hives and bee furniture, Mr. Baldwin and Mr. Griffin for useful apparatus. For the best skep of bees: Mr. Antell, 1; Mr. Rottenbury, 2. The silver medal, and likewise the bronze medal, of the British Bee-keepers' Association were awarded to Mr. A. Smyth. A large amount of honey was staged both in comb and run; the apparatus exhibited by Mr. Baldwin and Mr. Butt was complete in every detail. The tent in which these exhibits were displayed was thronged for many hours.

It is anticipated that there will be a large addition to the members of the Devon and Exeter Bee-keepers' Association as the sequel of this show.

FLOWER AND BEE SHOW AT ABERDARE.

On Thursday, August 12, a Flower and Bee-show was held at Aberdare. Mr. G. Walker, of Wimbledon, acted as judge, and during the day gave very interesting illustrations of the management of bees. The following were the awards:—

Largest and best exhibit of super honey, the produce of one apiary: 1, Mr. H. N. Kettle; 2, Mr. E. Richards, Talyllyn. Largest and best exhibit of extracted honey, the produce of one apiary: 1, Mr. H. N. Kettle; 2, Mr. E. Richards. Best 12 lb. sections of comb honey: 1, Mr. J. Muir, Margam; 2, Mr. W. Gay, Cardiff. Best 12 lb. bottles of extracted honey: 1, Mrs. Price, Breeon; 2, Mr. E. Richards; certificate, Miss Price. Best samples of beeswax: 1, Mr. E. Richards; 2, Mrs. Price. Best kept hive of bees: 1, Mr. D. P. Davies; 2, Mr. R. J. Rhys, Plasenewydd.

GLAMORGANSHIRE HORTICULTURAL SOCIETY.

Annual Show at Cardiff.

The twenty-third annual show of the Glamorganshire Horticultural Society was held on Wednesday, August 11, under most auspicious circumstances, in the Sophia Gardens, Cardiff.

A novel and attractive feature of the show was the exhibition given by Mr. George Walker, of Wimbledon. This gentleman exhibited several hives with their inhabitants, and explained and illustrated the various methods to be adopted in order to carry on bee-culture both profitably and well. Mr. Walker was most attentive to his auditors, and put himself to considerable inconvenience to oblige them. Before the show was opened to the public he explained to the representatives of the press his theories as to conducting an apiary. The bees—who, presumably, were strongly opposed to Radicalism, and showed in a marked manner their hostility to the representative of the Radical journal, by resolutely attacking him in defence of their 'Queen' and 'Country'—were in two straw skeps, and Mr. Walker showed his process of driving the bees from one hive to another without trouble, thus saving the loss of time consequent on waiting, perhaps a season, for a swarm of bees. Mr. Walker delivered lectures during the day to a large number of persons curious to know the habits of the useful little insect.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

ALBINO QUEENS.

[520.] You will remember that about the middle of June I introduced a queen of this variety, the report on which brought the hornets' nest about my ears, of which I hope we have had enough; but as I think you and your readers may be glad to know how she has progressed, I just say that she is highly prolific and that her progeny are of the most beautiful. They are very prettily banded, somewhat like the brightest Ligurians, with the white bands near the point of the abdomen very distinct. I would rather not give an opinion on their temper at present, as I remember my report on the Cyprians and Holylanders some years ago, when they were quite young, had to be much modified when they (the bees) reached the age of discretion, and knew how to make an attack. At present the Albinos are all that can be desired, and I have just received and safely introduced six others from Mr. Homan, of Bedford Park, who, I believe, first imported them into this country from America.—C. N. Abbott

Southall, July 31.

DIRECT INTRODUCTION OF ALIEN QUEENS.

[521.] I ought, perhaps, to apologise, Mr. Editor, for appearing before you with this subject immediately after the paper by so eminent an authority as the Rev. G. Raynor, at the Exhibition on the 31st ult., but, unfortunately for myself, I was unable to be there on that day, being in harness for the Kent Bee-keepers' Association in their gauzy tent, so at present am in ignorance as regards the paper and discussion thereon. From the correspondence in the *Journal* it would appear that the majority are in favour of caging the queen; now that, I consider, is quite unnecessary, not being infallible, and, to say the least of it, is a useless waste of time. All bee-keepers know in what a state of subjection—one might almost say imbecility—bees are when driven from a straw skep, and how easily they may be united without further trouble at such a time; well, it is upon that principle I work when introducing queens:—once get your bees in that happy condition and success is *certain*.

Of course, with a skep, nothing is easier than to drive the bees, taking away the old queen, giving the new, and putting them back; but turning a frame-hive topsy-turvy and drumming is out of the question, though the same ends may be attained by shaking the bees quickly from their combs on to a large board placed level with the entrance, at the same time depriving them of their queen and dropping the stranger amongst them. Do not be afraid of using the smoker, remember you are endeavouring to thoroughly *intimidate* the bees, replace the quilt and cover, and quietly work the bees into the entrance; by the time they reach again their normal condition there will be no inclination to destroy the illustrious stranger. The whole operation need not take more than ten minutes or a quarter of an hour, and should be done in the evening.

I described this plan in the autumn of 1884 in the *B. B.*

Journal, and since then have had ample opportunities of testing it, and feel more convinced than ever that it is the simplest, quickest, and most reliable way of introducing queens to a stock in *any* condition that I am acquainted with.—One of the Experts.

QUEEN INTRODUCTION.

Another Success.

[522.] In the paper by the esteemed George Raynor we read towards the close of Part I. on direct introduction this—'The only other method of direct introduction which requires notice is that discovered by Huber,' &c. I must confess that I read the above with some amazement. We have now been discussing queen-introduction for several weeks, the system of Simmins being quite prominent and spoken well of by all those who have stated that they have tried it. It was also previously before the public for some time with Mr. Simmins' guarantee of its success. Is all this in the eyes of Mr. Raynor nothing? Simply unworthy of notice? I could not help, sir, calling to mind the correspondence which raged some time ago on Mr. Simmins' previous method of direct introduction, and how that, failing arguments about the subject, even the grammar came in for its share of satire, until the editorial pen inscribed the edict —'This correspondence must now cease.' Perhaps I see a little farther on the reason for Mr. Raynor's silence. At the close he says, 'I will simply add that I have only given my own experience of the methods enumerated,' therefore I suppose we must conclude that the Simmins' method had not been tried by him. I think this is much to be regretted. A man occupying the eminent position of Mr. Raynor on this subject would certainly have conferred a great advantage on bee-keepers generally if he had tried the simplest, easiest, and least expensive, and, as far as I have tried, the safest, of all methods of queen-introduction, and been able to have given us his judgment upon it. What we want is simplicity and safety. The former we have in the No. 1 process in a pre-eminent degree—the latter has to be proved or disproved by experience. Why cannot our teachers try it before they instruct us?

Mr. Abbott came before us a few weeks ago as a gentle instructor in this subject, but he has not been very successful in that office. He puts one in mind of a pedagogue who having lost his persuasive authority slashes out on all sides at the innocent and guilty alike. When Mr. Mellin innocently says he did not know the reason of his queen being balled, he simply satirises where he should instruct. I do not think there is the least need for surprise at a queen being balled, as it is almost as likely to occur with an old-established queen as a new one at this period. I have had many queens balled—(not newly introduced—I treat them with too much care, and examine only when I am sure other bees are not about, for that)—but I always find that a puff or two of smoke, or the remedy recommended by Mr. Raynor of a feather dipped in carbolic solution and nearly dry and the bees touched with it, always puts the matter right without handling the queen and dropping her into water.

On closing a hive which appears sufficiently disturbed to ball her I drive in a few puffs of smoke when I am closing up. This renders all safe, especially if a little carbolic is added at the entrance.

Mr. Abbott's declaration that the pipe-cover cage is at the bottom of the failures of the caging process is astounding, and in strange contrast to the experience of Mr. Raynor, the inventor of what Mr. Abbott considers the better cage. 'Was there ever such an invention for tearing off queens' legs,' he says, 'and drowning them in honey when the cage is pressed home?' As I have never heard of any one meeting with these misfortunes, I am tempted to ask if it is Mr. Abbott's own experience? Mr. Abbott has again had the opportunity of stating what he thinks of, and what is his experience of, the simple methods of Simmins, but as he fails to give any information, I think we may conclude that he has not tried them. When Mr. Abbott so cordially recommended his own cage, he said that if he could choose the stocks for the purpose and the time to do it he would guarantee that he did not fail with his cage more than once in twenty times! Surely, we want something safer than that. Simmins' method is guaranteed to succeed every time in all kinds of stocks. I have previously given my experience with Simmins' process, when it has acted admirably under what would be considered great disadvantages. I should not have written this only that I have another success to record, under circumstances which, I should say, would be interesting to Mr. Walker, considering his remarks at the Conference.

I have a very strong stock of hybrids—the vilest stock of bees I have ever had. It has been impossible to go within a few yards of them this summer without being severely attacked. I wanted to give them a Ligurian queen. The combs were so thick with bees that it took me one hour to find the reigning monarch, and ultimately did it by shaking the bees from the combs on to some boards in front of the hive. During this hour, fighting and robbing were rapidly increasing, and by the end the bees were in as bad temper as provoking circumstances and ill-nature could well produce. It was five o'clock, and excitement continued as long as the bees could see to carry it on. I hesitated as to whether I should cage the queen, or let her run in. I felt confident caging would fail under such disadvantages, so at dusk she was run in, and I am pleased to say that now there are thousands of eggs and young brood in the hive—her produce. Verily, there is 'balm in Gilead.' I have now tried this simple method under so many disadvantages, and always with success, that I have the utmost confidence in recommending it to my fellow bee-keepers.—John Rudge, *Dursley*.

QUEEN INTRODUCTION.

Introducing Stock to Queen.

[523.] The plan which I have adopted differs from those at present given in the *Journal*, but having received at various times ten or twelve Italian queens, I have never lost one by introduction, and the process is very simple. It may be stated as introducing the stock to the queen, instead of the queen to the stock. I remove the black queen about noon, and at night I remove the covering of the feed-hole in the quilt, and place the box containing the yellow queen (after having removed the lid) about four or five inches away from the hole. The young bees which are always seen running about after the removal of their mother find the box, and commence that peculiar sound expressive of joy at finding what they evidently suppose to be her; the box is soon filled with very young bees, and when the cover of the hive is removed next morning, the fact of the box being empty is proof of the successful unity. Sometimes several days will pass before the new queen goes down into the hive, but, no doubt, she is the best judge of the situation. If fighting take place at all, it is the few yellow bees who accompany the queen, but as the multitude of young bees swarm in (being too happy to fight) the defence very soon ceases, and perhaps five or six bees are killed, but mostly no fighting takes place at all.

I do not remove the whole of the lid from the queen's box—only a portion, and this is done during the day, so that when placing the box near the feed-hole it is done as carefully as possibly to *avoid disturbing the bees*, which will at that time snugly be at rest (in the upper part of the box), and in a state of repose they do not fight.

I also adopt the same plan in joining two weak stocks together, and seldom lose a bee by fighting. I first contrive to bring the two hives together by degrees, then A is to be joined to B. I wait until evening, and as soon as all the bees are at home I remove A a good distance off and place B in its position. This is done carefully to avoid disturbing B; then after a few minutes I open A, and disturb the bees rapidly so that they fly in clouds to their old place; here they set up the peculiar sound before mentioned. I then shake off from the combs of A every bee, just in front of B, and no fighting whatever takes place. I have adopted this plan for years, and have no losses to mourn.

In both cases the bees are deceived, the young bees running in search of a queen think they have found her; and when the bees from A fly, they as surely think they are going home, and in both cases the expression of joy gives them a welcome.—T. F. Ward, *Highgate*.

CARBOLIC FUMIGATION.

[524.] If you care to have my first experience, here it is. I did, however, mention some time ago that I had tried the disinfectant powder on my gloves, and should try it again. I did not follow it up, but I think it was a deterrent, and even if not stung, it is just as well to prevent the bees from losing their lives. Well, two days ago, not having, for various reasons, got the latest machinery, I availed myself of two hours' sunshine to do what I could with a makeshift. I duly mixed Calvert's No. 5 glycerine and water, and put it into a pickle bottle. A rag round the cork, tied above, gave me a holdfast. I then picked up a fowl's feather in the yard, and stuck it in the cork; it reached just to the bottom of the bottle. On turning back the edge of the cloth of the open rack, I find the bees thick on the outside sections. The cloth had drawn off the propolis from the ¼ in. between the top of one and the glass, and I insert the wiped feather, when, lo! there is at once a complete stampede, and hardly a bee left. The other two I did not treat in the same way, but proceeded to operate further in. I held my feather, now a narrow strip, along the openings, and blew through my veil, with as good a result as I could wish. Presently I removed the rack, and threw a cloth over the top of frames. A short distance off, round some bushes, near where the sun shone, I commenced to remove sections, and never had an easier job. I always do this in the open, taking each section away to a point from which the bees can fly home when shaken off with two or three twirls of the wrist. Generally at the end of the work several of them are pugnacious, but in this case all the fight seemed out of them. They left the sections quite easily, and I think I may say that not one attempted mischief. There was a little odour of carbolic on my veil; blowing through this started any sluggard, and the useful feather completed the work. Nothing could have been easier. To-day, again, I have removed ten sections from a skep containing a swarm of this year, and I need not have had veil or gloves. Some brave brethren of the hive will think I may as well now give up both, but, as Mr. Abbott said to me some years ago, It is as well to be safe, and I have too much need of my hands to risk always the swelling which many stings cause. I hope in a few days' time to try the artificial blower.

There have been scores of drone grubs ejected from two of my hives during the rain of the last two days. I swept thirty together off the alighting-board of one. These were a fortnight old, and a fortnight ago drones were being killed at another hive. So here was a very late laying of drone eggs. Is it that we upset the balance of nature by using so much worker foundation, and that queens have an impulse to lay a certain number of drone eggs in the year?—C. R. S., *South Cornwall, August* 14.

AVOIDING STINGS.

[525.] How seldom we find beginners in bee-keeping attending to the advice given on the above subject by more experienced hands, especially as to the time of day for manipulations to be performed, and also the description of weather then prevailing. The case of the poor old gentleman so severely stung at Ludlow ought to act as a deterrent to such careless bee-keepers; manipulations should never take place late in the evening, unless you have a desire to be stung. Nothing will quiet a stock of bees on a cold evening, so the best plan is to let them alone; on a very warm evening just before the sun sets, after a considerable flow of honey during the day, one can handle them with comparative impunity. A cold day, besides being pernicious to the brood, is always fraught with considerable chances of getting stung badly. I have seen stocks and stocks of bees that during a warm day would bear any amount of handling, but try them during the evening, especially if cold or thunder and other atmospheric disturbances are about, then they would be perfect 'demons.'

The novice, armed with fumigator or smoker, fancies that the secret of handling bees lies entirely in its chamber; he is mistaken: it does truly, to a considerable extent, yet he must take into consideration the surrounding circumstances. Don't hurry, act quietly, you do not want to take the hive-cover off with a rush, you can do it quietly quite as easily. Gently raise the quilt from one end and drive the bees firmly back as you peel it off. Do not pump into the hives, but just use your bellows as if you were breathing with them. Wait until the bees are busily engaged in filling themselves, then do what you want to do to them and you will come off scatheless. Always wear a veil, no doubt it sounds very grand to be able to say, I never wear a veil! but experienced bee-keepers don't think much of such an assertion. Putting aside the inconvenience of having a bee introduce his dagger into your eyelid; it is annoying to have one busily engaged in fanning on the tip of your nose with both one's hands engaged. In the bee-tent we are of necessity obliged to be uncovered in order to show with what ease they can be managed; but bees in a tent and bees in an apiary are two different things, if you can manage to keep the robbers away.

I trust that these few words will have the desired effect of preventing a few shut-up eyes and swollen cheeks of your readers, as well as scoldings from the anti-bee-keeping wives of the same.—W. B. Webster, *Wokingham*.

QUIETING BEES.

[526.] I was glad to see in *B. B. Journal* of July 22nd that Mr. Howard, of Holme, was so successful in his method of quieting bees, and I think it would be a great boon to many bee-keepers if he would give his method to those requiring it for a small charge, as my greatest difficulty is in quieting my bees. I use a Clark's smoker, but it often goes out or emits but a weak smoke, just at the critical time, and frequently compels me to abandon the work in hand. I do, therefore, hope Mr. Howard will, in the interest of bee-keeping, make his method universally known.—True Blue.

MORE LIGHT!

[527.] On behalf of the great army of amateur bee-keepers, of whom I am one, may I ask for more light and guidance? It is, I assume, the object of the *Journal* and the B.B.K.A. to do what they can respectively to promote bee-keeping, and the amateur therefore is their especial care. About the ninety and nine who have grown old in the pursuit, they have no particular fear, because they are well able to accept or refuse advice tendered to them, and set up their own experience. The amateur or beginner is, however, necessarily de-

pendent on suggestions received from the grave and reverend seigneurs of bee-keeping; but for my own part, I can only say that out of many bushels of advice one can only pick one small grain that is of use. Not that the advice is unsound, but the advisers seem unable to 'write down' to the level of the youngsters. For instance, I, and I dare say many more, cannot devote any time to bees, except in a morning, and again in an evening, the exigencies of business taking up the whole day. Here comes the adviser (writer of 'Useful Hints,' or otherwise), and says, 'About midday on a fine day, when drones are flying freely,' do something or other. Now, for the reason just given, one cannot do it at that time, and it is not given to us all to be possessed of that wonderful gardener who understands bees, and can do as he pleases with them. Then the amateur tries the experiment in the evening, and he finds himself figuratively in a hornets' nest. He closes up his hives, feeling sad; happy if it should turn out that he has not ruined and demoralised his bees. On applying for advice, he is told that this was the wrong time of day to do the work, and that if his apiary is not demoralised, it stands a chance of being so; and one reads between the lines, and thinks that the adviser firmly wishes so, because of the folly of the poor amateur in not following rules. What can he do?

Again, advice is given, 'Cage the queen on a comb containing honey and brood,' and do something else. I don't need here to refer to the disagreement of the doctors upon caging and non-caging; but how is the amateur who has never seen a queen in a hive to find her? and, having found her, to cage her? I am not ashamed to confess that I have never yet seen a queen in a hive (agreeing to that pretty picture on the front page of the bound *Journal*), although I have again and again sought for her. Why cannot the advisers give some hints of how it is done? I have seen queens many times *out* of the hive, but never *in it*.

Some writers, again, write about certain things to be done which clearly refer to hives with top-board instead of a quilt, utterly ignoring the latter. How can an amateur, who has got his swarm or two of bees, with his hives with high sides and quilts, who has never heard or thought of any other sort, understand all this?

Putting on supers is, again, a difficult matter. From the letters of some advisers, I have come to the conclusion that the only safe way is to keep putting on sections and taking them off according to the weather. We are told to put them on 'when the hive is crowded with bees and brood.' Now, 'crowded' is a wide term. It may mean to the full extent of the hive, or only on the few frames the amateur has in his hive. How easy it would be to fix on a number of frames!

For wintering we are told 'to leave a sufficiency of stores,' and 'about three superficial feet of sealed honey.' How on earth can a man manage to measure what he is leaving for his bees? Only once has anybody been sensible enough to say that about two or three frames fully sealed is 'a sufficiency.'

'When the honey glut is on, and the hive is crowded, &c., put on sectional supers.' For the life of me I cannot tell when a honey glut *is* on, I never know when the various honey plants bloom, nor when supers should be placed. I never even know when it is over, nor when to take the supers off. All this may seem dreadfully ignorant to those of your readers who have grown up into bee-keepers; but to a stripling in the science, and one whose sedentary occupation is distinctly removed from rural pursuits, it will appeal with full force. It is not your fault that the *Journal* is published in the South and that the majority of the advisers reside there; but it is difficult to work in the bleak North on advice given for the sunny South. How wise it would be, if the advisers from various points would say, 'Put on supers next week, if weather continue fine.' I am isolated from all societies, and never hear a bee-lecture. I know one or two bee-keepers, one six and the other forty miles from me, but I cannot always be appealing to them. I must trust to the *Journal*.

I have a good deal more to say, but I cannot now say it, having occupied space enough. I am quite prepared to accept 'ignoramus' and any other term of reproach calmly, if my effort has been productive of use to that army who cannot afford to live always in the open, attending to their bees but are compelled to spend the greater part of their days—Sedentes in Antro.

BEE-KEEPING IN MADAGASCAR.

[528.] Your correspondent on 'Bee-keeping in Madagascar' (498) is not distinct in one of his statements, or I believe, is in error in his calculation. Is it that there were five hollowed trees, such as he describes, to receive the 280 cubic feet of honey comb of the villagers? One such tree would only contain, in round numbers, 60 cubic feet.—Colenso.

REASON OR INSTINCT?

[529.] It may interest your readers to learn of occasional departures on the part of bees from their usual custom, which might lead one to infer that reason is brought into play by them oftener than is supposed.

One case is that of a recent swarm from one of my hives, which settled in my own garden, but as it proved to be too large for the only skep I had, it took flight again and settled in the heart of a thick hedge a quarter of a mile off. It was however disturbed by boys (disturbing them in turn), and took wing right away for a mile and a half. Here it at once hived itself in one of three empty frame-hives standing in a garden where no bees are kept, my own being the nearest. The old queen, a French lady sent to me from Boulogne last September, had already yielded me a May artificial swarm, and had probably never before had a flight in this country, unless, as some believe, queens indulge in exercise oftener than is stated. She must therefore have been guided to the empty hive by the swarm which had discovered its whereabouts by the swarm-scouts. If reason may be defined as judging and coming to a conclusion by logical inferences, then this swarm reasoned that, as I did not find them a suitable home in my apiary they would go to a place they knew of just as good as the hive they left, and that a wooden artificial hive, instead of going according to natural instinct into a hollow tree, or bank, or wall, many of which they crossed *en route*.

The second instance recently occurred in the garden of Mr. Neill, of Urswick, Lancashire. A last year's swarm had filled their bar-frame hive with honey and brood, and in lieu of supers filled three frames of an empty hive a foot or so away, with honey. This lot was not a swarm, for there was neither queen nor brood, for when shaken off the combs they flew back into their old home. This is I think noteworthy.—R. A. H. Grimshaw, *Cray Hill, Horsforth, near Leeds.*

PREPARING HIVES FOR WINTER QUARTERS.

[530.] A question is asked by 'Theta' as to how many frames should be left in the hive during the winter, and no doubt a chorus of answers will be, six, or at the most seven. Now, sir, there is generally one in a choir whose voice is either a little squeaky or discordant, perhaps through not attending practice often enough, or probably his heart and soul is not thrown into the matter sufficiently. If I am that one I hope my brother bee-keepers will credit me with giving the best advice I possess, even though it is not *at present* considered orthodox.

'Theta' may consult his own wishes as to reducing the

number of frames for winter quarters, if he has several hives let him try half reduced and the other half with all the frames left in and then he will be able to give us his experience another season which does best, which come out strongest in the spring, and which prove his best and most profitable hives next year. I may tell him my best hives this season have been the few I left all frames in last winter, and if I had left all my bees last year to winter on ten frames I should have had a great deal more honey this year than I have had, that is, supposing the few I left all frames in are any criterion to go by. My best hive this season, also the same for several past seasons, is one made from instructions given in Mr. F. Cheshire's work on bee-keeping, it contains twelve frames (Woodbury size), and it has wintered year after year on those twelve frames, has not swarmed since they were first put into the hive seven years since, and has proved successively one of my strongest and best colonies (if not *the* best) in my apiary. They winter under the original crown-board with a strip of glass to cover the opening in the crown-board with bee space over the frames and under the crown-board. I have never put a feeder on the hive. After the supers are removed I replace the glass, gum some down with strips of paper, then a piece of flannel, and then heap up dry chaff and a piece of canvas tucked in all round to keep it from blowing about, and leave them till the following spring unmolested.

Then a word as to re-queening. I have not troubled to ascertain if it is still the same queen that I put into the hive with the swarm, neither do I intend to do so as long as the hive continues in such a prosperous condition as it has been in the past—that I shall leave to the instinct of the bees: but if the same queen still occupies the proud and honourable position of head of the colony, she will soon if we measure her life by the number of generations of bees she has produced, attain the jubilee of her reign. I have successfully wintered bees under glass, wood, floor-cloth, carpet, &c., and those under crown-boards with space over tops of frames, have come out in the spring year after year in as good condition as those under a quilt of carpet: but I must add I always pack with chaff over either kind of cover for frames, and if at any time during the winter month I move the chaff aside and lift the wrap, I find the piece of glass on crown-board as dry and free from moisture as the chaff that covers it; and so with my colonies with quilts, those left last year with full number of frames and well provided with abundance of food have done better this year than those I reduced to six or seven frames, and returned frames as required in the spring with continual feeding.—W. Woodleigh.

BIRDS KILLING BEES.

[531.] I have been for some time a subscriber to the *British Bee Journal*, and still longer a reader of it. For various reasons I have hitherto abstained from appearing as a writer in its pages, but on the subject of birds eating, or rather killing, bees, I think I can give some information, and your request to your readers to do so induces me to respond.

I have for over half a century been a rather close observer of birds in their natural state, and of course am very fond of them. I have lived nearly all my life in a house surrounded by a demesne of about 130 acres, very much wooded, and with large garden and orchard, so that I have had ample opportunity of observing birds of very many varieties, as the place is actually alive with them, they having been always preserved and protected. I have now for over four years had bees in bar-frame hives, and attended pretty closely to them, and my experience is that tits of three kinds—great tit, cole tit, and blue tit—all kill bees, and all kill worker bees; but my experience also is that only a few individuals do so, and that the great majority of all those varieties are quite harmless. My bees are in a small walled-in garden close to the house, and at the other side of this bee garden is the large kitchen garden. Both are full of tits, and in the early spring I have to watch them closely, and every year a few commence to catch and kill the bees, and when once one commences he sticks to them most perseveringly. So the moment I detect one killing a bee, I immediately shoot him, and though, as I said before, the garden is full of them, comparatively few ever touch the bees, and those that don't are quite safe from me. The blue tits are the most inclined to kill bees, but the great and cole tits occasionally take to it, and when they do are just as bad as the blues. I have never seen the long-tailed tit touch them. It is only in the early spring that the tits ever touch my bees; when insects become at all numerous they let them alone. I dare say that those that commenced to kill them early would continue to do so, and perhaps teach others, but that I always shoot them as soon as they begin, and I have never seen a tit of any kind killing bees after the drones appear.

The tits are not the worst bee-killers I have to deal with. The chaffinches are much worse, but, like the tits, only a few individuals take to it; though they are actually in thousands here: they also begin in early spring. The wall of the bee garden is about ten feet high, and not far off there are some very large, old laurels, which flower most profusely every spring, and, of course, on a fine day are perfectly alive with bees. Then a cock chaffinch (always a cock) takes up a position on the top of the wall, and as a bee flies over, flies up at it, catches it, carries it to the branch of an apple-tree in the kitchen garden, only a few yards off, beats it against the branch to kill it, and eats it at his leisure, and comes back to catch another; but I keep a sharp look-out, and as soon as I see one at work I at once shoot him. But only comparatively few ever take to killing bees, and only when other insects are scarce, and they also give it up, or, perhaps more correctly, cease to take to it, before the drones appear.

I have no fly-catchers here, nor do I know of any other birds but tits and chaffinches killing my bees. I two or three times have strongly suspected a greenfinch of being at them, but never could detect him, and consequently gave him the benefit of the doubt and did not shoot him, and I think now that if he really was killing them I should have detected him sooner or later.

Strange to say, there is not a single sparrow here; formerly they were very numerous, and the chaffinches not nearly so much so, but the chaffinches have multiplied exceedingly, and the sparrows have entirely disappeared. Up to this year there were a pair or two, but not one has been seen this year. Long ago, when we had bees in skeps in the large garden, and sparrows were very numerous, a few used to take to bee-eating, but always in spring.

I have come to the conclusion that it is necessary for bee-keepers to keep a close eye on the birds in spring, and to immediately shoot any individual bird that they detect in killing bees, but that it is a piece of wanton and useless cruelty to exterminate, or promiscuously trap, birds of any kind, because a few of their species kill bees, as in both tits and chaffinches, the only birds I have which kill bees, the guilty are the exception, and the innocent the rule: and I feel sure that if closely watched, and the bee-killers shot off as soon as they appeared, the number of our feathered favourites need not be at all perceptibly diminished in protecting our bees. But traps of any kind should not be used: they kill promiscuously, and, I should say, in general much more of the innocent than the guilty. As to birds eating drones, I think it exceedingly likely that those birds which take to bee-eating in the spring, if not previously killed, would be very likely later on to prefer

the drones, and give up the workers for them; but, as I have said before, I have never seen any bird killing bees after the drones appeared, and I am very strongly of opinion that swallows never kill them, or any insect nearly so large.

Perhaps I should say that most of the shooting has been done by my son, and that his observations and conclusions from them entirely coincide with mine. I may perhaps mention that this spring I saw two geese standing opposite a skep near a labourer's cottage and snapping at every bee which flew out, and catching and eating a good many of them.—G. J. H.

BEES FIGHTING. [479.]

[532.] Can you spare space for me to reply to A. T. Wilmot by way of thanks for his kind consideration of the case referred to? But in justice to himself and others, I must assure him that he is altogether mistaken when he says that all or nearly all the honey must have been extracted from Nos. 1 and 2 hives. I beg to assure him that there was abundance of honey left in all the hives. The brood-nest was not disturbed in either case; hence the query. But I am certain it was not caused by not returning the same combs to the bees again, as I was at first inclined to think. Having since extracted largely from some of my own hives, from one I extracted 45 lbs. of honey, and I am certain I left much more in the hive. I returned empty combs to this hive which I had extracted from another hive, and in about a quarter of an hour afterwards one would not think that the bees had been disturbed in any way. I may say here that my frames are all standard size, and the outside comb had the space of its own. I removed the dummy; the bees then drew the comb out, and filled the space, and it weighed 9 lbs. 10 ozs. I am pleased to say that the combs are being refilled again. I may say I used no smoke in this case, and I much prefer to work without it, and it is generally managed very well by the use of a veil, and handling the bees very gently.—A Kentish Bee-keeper.

A MISSTATEMENT RECTIFIED.

[533.] An article, made up chiefly of your editorial of the 5th of this month, appeared in the *Eastern Daily Press* of the 13th. In it, however, was inserted by some Norfolk hero this paragraph:—'Norfolk should have been second, for the Hertfordshire honey was the produce of one member only, which, had the judges been aware of the fact, would certainly have disqualified it.' I think my old friends, the judges, will be astonished at this statement. Mr. Huckle, to whom I have sent the romance, tells me that there were about twenty-five exhibitors in the Herts exhibit.—J. Lawson Sisson, *Edingthorpe, August 16th.*

Foreign.

CANADA.

Our surplus honey season is, in most localities, almost at a close, and the Canadian bee-keeper can make a fairly accurate estimate of what his season crop will be. Clover has yielded well, but linden has, on an average, not given us half a crop. The abundance of buds upon the trees promised much, but the dry, intensely warm weather, when they first opened into blossom, appears to have blighted them with the result that the honey crop from them is almost a failure. The increase in bees has been remarkable, some of our bee-keepers with the longest experience state they have never known of anything like it. This is, probably, owing to the favourable weather we had early in April, for building up followed by fair and continuous honey flows until clover bloom. A honey flow not sufficient to cause crowding in the brood-chamber, but sufficient to give ample food and stimulate to rapid brood-rearing. No estimate can be made of the probable price of honey, comb-honey is firm and producers of it appear to be satisfied it will be no lower than heretofore. The producers of extracted, generally, are quoting at the same prices as last season. Our only remaining sources for honey are thistle, buckwheat, and fall flowers. Thistle requires hot, damp weather to enable it to yield, at present we have no prospects of such. Buckwheat is found in but few localities, and bee-keepers generally avoid placing it upon the market. It yields a honey preferred by some, disliked by most. A yield from fall flowers such as golden rod, lone set, astor, &c., sufficient to give a surplus, is always doubtful and rarely occurs. The honey is not considered first-class in any case at this time of the year, but the average Canadian bee-keeper considers himself fortunate if his bees secure all they require for immediate consumption from the 1st of August until winter sets in. I may say it is utterly impossible for Canadian honey for the Indian and Colonial Exhibition to leave Canada until the latter part of the first week in August; the Commissioners regret this very much, they from the first did not expect to start before that time, and regret that they will be unable to meet with the many British bee-keepers who will have met and dispersed: but the Canadian Commissioners will reach the British shore.—R. F. Holtermann, *Canada, July 20th*, 1886.

In the *Canadian Bee Journal* of July 28th there is a letter from Mr. S. T. Pettitt, President of the Ontario Bee-keepers' Association, calling on bee-keepers in that district 'to forward to him as much section honey as they can.' He also calls for 'nice extracted honey:' he expects that, 'owing to the short crop of comb in England, that that article will command a nice figure over there.' He expects great results of opening a market in Europe if they succeed in making a good exhibit. He says that, probably, they will ship about August the 15th, or a little sooner. If that hope is realised, we may in a few days expect to see in South Kensington a second exhibition of honey, &c.

FRANCE.

Among the various more or less direct plans which meet with favour among producers for pushing the sale of their honey, there is one, says the *Apiculteur* of Paris of last month, which has already been adopted by French vine-growers. This consists in the appointment of honourable commission agents having a good connexion among consumers and retailers, as these have plenty of opportunities for opening up depôts all over the country.

There is every reason to believe that the adoption of some such plan would constitute a step in the right direction. We know, adds the writer of the article, a certain number of bee-keepers who entrust such brokers with the disposal of their honey; and they have, so far, every reason to be satisfied with the result. Moreover, there are small bee-keepers who could dispose of more honey than they can produce: these might become *depositaires* for their brethren who suffer from want of buyers, and thus establish a sort of co-operation which would be sure to prove of mutual advantage and beneficial to the cause of apiculture. But how is the start to be made? We would suggest advertising and canvassing, the rest would soon follow.

Then again, when the price of an article falls, that of its package should also be reduced in proportion. By this we mean that the 40 kilo kegs in which run honey is now delivered by bee-keepers of the Bordeaux and other districts, costing from 3.50 to 5 francs each, which represents about a penny per kilo, should be replaced by

tins, as already in use in the United States of America. They are safer and would do away with that leakage, which is another source of loss to the bee-keeper, although it may be caused by extra rough handling on the part of railway porters. Such tins placed in crates would travel much better, and their tare could easily be ascertained. There would be no difficulty to fix upon certain sizes of tins as would hold round quantities of honey, of say 50, 75, 100, or 150 lbs. each.

SOUTH AUSTRALIA.

Ligurian Bees.—The South Australians seem determined to propagate a pure race of Italian bees. A Bill has been introduced into their House of Assembly to exclude all other bees from Kangaroo Island. Mr. W. E. Downer, in moving the second reading of the 'Ligurian Bees Bill,' said this measure was one of great interest to bee-keepers on the island and the public generally. He said the Chamber of Manufactures was so impressed with the advisability of introducing and keeping pure the breed known as the Italian, at their request, and that of some other people, his honourable colleague tabled a motion in the matter; and when he had accepted a position in the Government, the task devolved on him (Mr. Downer) of moving the second reading of the Bill. He was assured by those who had paid great attention to the matter that their advantages were great. The drawback to having both sorts of bees living in the same district was that they mixed readily, the result was a combination. The Ligurians being introduced and their desirability settled, the next point was to find a place where they may be cultivated pure. Such a place was Kangaroo Island, both by its distance from the mainland, and by the trees and plants which grew there. Kangaroo Island would form a useful dépôt for the culture of the bees pure, whence Australasia could be supplied with pure stock. The only other consideration was whether the exclusion of the black bee from the island would do any injustice to any of the residents. As a member for the district he would be the last to do this, and the result of inquiries made by himself and others was that the only black bees they had found was one swarm, which had since been removed through the action of the Chambers of Manufacturers, which supplied a swarm of Ligurians to the owner. He therefore believed that at present there were no black bees on the island. The first clause prohibited the breeding or importation on the island of any but Ligurian bees. Clause second gave power to a police-officer, on the authority of a justice of the peace, to enter on any place where black bees are supposed to be and have them removed. The third clause imposed a penalty of not less than 10*l.* or more than 50*l.*, with a term of imprisonment of not more than a month, for introducing other bees. On reconsideration of it he would ask the House in committee to strike out the penalty of not less than 10*l.*, because it was a high price for a first offence, and he would ask them to do the same with regard to the power to commit to prison.

Dr. Stirling ably seconded the motion, and mentioned that the house surgeon of the hospital at Adelaide kept a swarm of Ligurians and black bees side by side, and from the Ligurians he obtained as the result of the summer's work forty small boxes of honey, besides sixty or seventy pounds got in other ways. The black bees did not produce nearly as much. To keep the strain pure was most important. After several speeches in favour of the motion by various members, the motion was read a second time.

NEW ZEALAND.

I hear, on good authority, that the bumble (or humble) bee is now fully established in some of the southern districts of this colony. A large amount of money has been expended in trying to introduce these bees.

The season now past has been a very favourable one, on the whole, for bee-keepers. The estimated amount of the season's crop for this colony is about 300 to 400 tons, fully half of which was produced in Auckland province. But the price of honey has ruled very low, one reason for which was that there was in stock at the commencement of the honey season a large quantity of honey from last year. The prices this year ruling for best comb honey are 6*d.* per lb. in 1-lb. sections; poor to fair comb honey 4*d.* to 5*d.* per 1-lb. sections. Extracted honey in bulk and small tins, 2½*d.* to 4½*d.* per lb. Strained honey, 2*d.* per lb. wholesale.

There has been no show of either bees, honey, or bee-keepers' supplies in Auckland this year. Perhaps the reason that so little interest was shown in apicultural matters was the low price of honey this year.

My bees have done very well this season. I obtained about 65 lbs. of extracted honey per hive, and 45 1-lb. sections per hive. The honey season only lasted five weeks, from 14th November to 21st December.—Geo. A. Green, *Dairy Flat, Auckland, New Zealand, April 27th*, 1886.

SOUDAN.

A few days before our Bee Meeting in September last, a venerable missionary, with a face burnt by the rays of an African sun, came to ask my permission to say mass in my church. I consented, on condition that after mass he would partake of my frugal breakfast together with his little negro, about six or seven years old, who acted as choir boy. I soon noticed that European food was not very attractive to this son of Nigritia. Knowing that bees are to be found in every inhabited land, although the flavour of their honey may differ according to the respective flora, it occurred to me to offer him a piece of my honey-comb. I was not mistaken; the little blacky, whose preference was all for chocolate in tablets, soon took a decided interest in the honey, and after rolling his eyes at the sight of it, soon began eating it. Having given them a little time to exchange a few words in the Soudanese language, I introduced the subject of bee-keeping in Upper Egypt and Nigritia. His reply was to the effect that in a sunburnt country like that, the vegetation was not so luxuriant as in most of our European districts. The colour of the Soudanese bee is somewhat like that of the inhabitants: their darkish body is lightly covered with small hair. As far as he had been able to observe, the Soudanese bee has a smaller abdomen than ours, but its shape is rather elongated. Their habitation has been suggested to them by their own instinct, and the tropical heat in which they live. In their wild state, a swarm will fix its new abode in a cavity in the rocks, or rob some native of its small hut. When a Soudanese will house a few swarms, he digs a hole in the ground, forming its sides and bottom by means a few earth slabs, baked in the sun: in this way he builds up a sort of abode, to which bees will readily take to. In the rocky mountains, even less trouble is taken. A few slabs of stone, so adjusted as to form a room or little house, as the missionary expressed himself, suffice for their bees. But, what is worse still than the form of their so-called hives, is the way in which honey is taken. For instance, what is sold in Khartoum is a mere mixture of mould, dead bees, honey, and wax. It takes a good deal of time to separate these matters from each other. Consequently, this article is never patronised by Europeans. The negroes make with it a fermented beverage, which leaves itself a great deal to be desired. At the same time, it is evident that the local flora is not such as would favour the cultivation of bees on a large scale. It will yet be a long time before it can be said of the Soudan as of ancient Palestine, 'that it was a land running with wine, milk, and honey.'—*From the 'Apiculteur' of Paris.*

Replies to Queries.

**** *In their answers, Correspondents are respectfully requested to mention in each instance the number and the title of the query asked.*

[510.] *Feeding.* (Theta.)—Feeding should be attended to at once and finished by middle of September, care being taken that the feeder is wrapped or covered so that other bees cannot get to the food, or you may start robbing. Feeding will naturally stimulate the queen to continue breeding and bees hatched out in September will live far into next spring, but if your hives have a good supply of stored food now headed by young queens with a good quantity of bees I should advise you to make all snug and comfortable, contract the entrance and leave them to their own instincts as to breeding.—Woodleigh.

[511.] *Sections.* (Theta.)—The past season proving such a disastrous one for bee-culture, 'Theta's' empty section crates are the natural sequence of the same, and if his swarms have got enough food to winter on he must be satisfied, and hope to realise his wishes of filled sections in 1887.—Woodleigh.

[512.] *Wintering.* (Theta.)—'Theta's' failure with frail was probably caused by want of food and not due to the frail. If he wishes he can leave his American cloth on through the winter, though I myself prefer two pieces of carpet, then a chaff cushion, then a piece of canvas over all, well tucked in down the sides.—Woodleigh.

Echoes from the Hives.

South Derbyshire, August 12th.—The harvest, such as it is, is quite over now. Have many more unfinished sections left on hand than finished ones. Best doubled hives will only yield about 60 lbs., average about 25 to 30 lbs. Find lower storeys contain only a few pounds.—M. J. Astle.

Southfleet, Kent, August 16.—I much enjoyed my visit to Show at the 'Colindries.' The honey yield here seems much below what it was last year. You will be pleased to hear that since I started with one-frame hive in June, 1885, the number in this parish has increased to a dozen; three persons having adopted the 'better way.' I think that a shallow super with frames for putting on straw skeps would be most suitable for helping the cottager to obtain honey without killing his bees, as in this district extracted honey sells more readily than sections.—T. B. [The request in your letter will be attended to.—Ed.]

Corbridge, August 13.—I have taken 50 lbs. from one of my hives and none from others. They go to the moors on Monday.—R. L. Richardson.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

J. B. M.—*Ligurian Bees.*—The Ligurian bee, now generally termed 'Italian,' derives its name from the province of Northern Italy which lies to the north of the Ligurian Gulf, or Gulf of Genoa. This region is shut off from Northern Europe by the Alps, and thus the native race of bees was kept apart from the German race, and developed into the distinct variety of the beautiful and gentle Italians. You will derive information respecting the breeders and exporters of the Italian bee from the interesting papers in our back numbers on this subject by Mr. Cowan and Mr. Blow.

J. B. G. M.—*Twin-hives.*—The hive you propose is termed a 'Twin-hive.' In such you may keep two colonies of bees, but they must be treated as *two distinct* colonies, and the bees of one must not be admitted to the super of the other, or fighting to the death will speedily ensue. Twin hives have never been much patronised in this country. They are supposed to economise heat, and are considered good winter hives, but they often conduce to robbing, and it is very difficult to manipulate one colony without disturbing the other.

Q.—*Bees in New Zealand.*—We are obliged by the trouble taken in transcribing the passage from Froude's *Oceana*; but we have given insertion to it in a previous number. The object of the recent efforts taken in introducing the humble-bees to New Zealand was to fertilise the red clover.

John A.—*Moving Bees 150 Yards.*—As you are unable to move your bees the above distance in the way laid down by authorities in bee-books, we should advise you to treat the stock as a swarm. Drive the bees in the middle of the day; allow them to remain on the old stand till the evening, then remove them to their new locality and place them in the hive they are to occupy. Place a board or a branch in front of entrance to induce the bees to mark their new location, and make their former station as unlike as possible what it was previously. By the above method you will lose very few bees.

G. Doré.—*Carrying out Dead Brood.*—Now that the honey season is over, the bees, in their prescience, are reducing their prospective numbers by carrying out the dead drone brood which they do not desire to rear.

J. Hunter Little.—Same reply as above. The dead drones have no connexion with foul brood.

R. Sandall.—*Transferring.*—If you desire it, transferring can be done now; but it is a messy process, and invites robbing. The best time for transferring is to wait till the bees have swarmed, and transfer twenty-one days after.

Novice.—An answer to your question was given last week; if the reply was not sufficient supply further details.

W. H. R.—*Removing Hives 24 miles.*—The conditions of moving hives are, that the bees should have a sufficieney of ventilation, that the frames should be fixed, and that the hives should be conveyed over as smooth a road as can be selected, with as little jolting as possible. Let them be placed in a spring van on a thick layer of straw.

William Walters.—We are very pleased to hear of the success you have met with. If you forward a portion of the suspected comb we can determine whether it is affected with foul brood.

A Learner.—*Extracting Honey.*—Place the unfinished sections in an earthenware crock and put it in an oven, the wax melting will rise to the surface, leaving the honey pure and clear.

R. L. Richardson.—*Robbing.*—In covering the queen with syrup prior to her introduction, the probability is that some has been spilt on the alighting-board. This has given rise to robbing, and the consequent fighting which has been going on for the time mentioned. The excitement of the bees has been great, and the temperature of the hive has been raised, and hence the fanning by the bees which you noticed.

S. R.—The bees forwarded are hybrids. Some more than others removed from the original blacks and Ligurians. We do not think that if they were 'blended' they would be markedly 'vicious.'

Inquirer.—1. *Position of Hives.*—The position of the hives would be safe for the ordinary English bees, but if the bees are Cyprians or savage hybrids it is doubtful whether the distance from the public road would be sufficient. 2. *Moving Bees across two Acres.*—See reply to 'John A.'

J. J. Chinnick.—The honey earthen jars may be procured from Mr. Norman, Crawley, Sussex, who is also a bee-keeper.

Queen-wasps.—At the Flower Show at Grittleton, Bath, the following prizes were given by Mr. Read for the greatest number of queen wasps, or hornets, killed between April and June:—1st, H. Ayling, Grittleton, 620 killed; 2nd, M. Pearce, Leighdelamere, 564; 3rd, T. Wiltshire, Alderton, 416; 4th, T. Kimber, Grittleton, 355; 5th, W. Moore, Grittleton, 332; 6th, C. Shellard, Grittleton, 301; 7th, J. Pugh, Grittleton, 278. Total killed in April, 267; May, 1365; June, 1234. Total, 2866.

Correction.—P. 367, col. 1, line 8 from top, *for* 'care' *read* 'ease.'

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

THIRD-CLASS EXAMINATIONS.

Liverpool district.—By the kind permission of W. Lees McClure, Esq., Hon. Sec., the examination will be held at 'The Lathams,' Whiston, near Prescot, on Saturday 28th, and Monday 30th inst.

Hertfordshire.—An examination will be held in this county about the middle of September; intending candidates should give notice to J. Huckle, Kings Langley.

ASSOCIATION FOR NORTHUMBERLAND.

We are pleased to announce that there is every prospect of an Association being formed for the county of Northumberland. In an early issue we hope to be able to give the names of those gentlemen who are taking the preliminary steps towards its promotion.

CONDEMNED BEES.

By the term 'condemned bees' we understand bees owned by those who are not yet instructed in the humane system of bee-keeping, and which are therefore condemned to death by suffocation.

As one of the objects of the British and affiliated bee-keepers' Associations is to advocate humanity to 'that industrious labourer the honey-bee,' it behoves all members of every Association to rescue from the pit as many of these unfortunates as possible. This errand of mercy is doubly blessed. Not only do we save the lives of thousands of these industrious labourers, but at the same time get many good stocks at a small outlay, and also instruct the owners, so that at some future time they may be persuaded to see the error of their ways, and give up the sulphur-pit. A very common objection made by cottagers who cannot imagine of what use a lot of bees without combs in the autumn can be to any one is, that it is better to kill the poor things outright than to let them starve. This is quite true, and unless prepared to give the requisite time and attention to ensure their survival through the winter, it would be better not to attempt to take them at all.

In considering how best to attain this end, the following facts must not be lost sight of:—

1st. The life of a bee depends upon the work it has to perform.

2nd. The bees which survive the winter in the best condition to start the colony on a career of prosperity in the spring are those which have done the least work in autumn.

3rd. Wax-secretion and comb-building are very exhausting, and the autumn is an unsuitable time for the operation.

The bees which we take from the skeps have already done their share of work. The honey is sealed, the brood is hatched, or at any rate sealed, and the nest is prepared for winter. If we take these bees and force them to build combs or draw out foundation at a season when such work is entirely contrary to nature, it follows as a natural consequence that their energy is so far exhausted by this unnatural labour that when the spring arrives, with its trying work and cold winds, they die by thousands, and the stock dwindles away before sufficient brood can be raised to start it fairly.

From all this we learn that to obtain the best return for our trouble, in taking the bees we must place them as far as possible in the same state in which we found them. They must be hived on combs ready built, and stored so as to have as little work to do as possible.

To obtain these combs we must set our strong stocks to work drawing out foundation for them. By removing the outside combs as fast as sealed over, and giving sheets of foundation in the middle, at the same time giving unlimited food, we can get combs ready for the condemned ones, and we can get some more by crowding our stocks for the winter, and removing the outer combs.

It may be objected that by giving our own stocks so much work to do we wear them out, but it is a very different thing feeding established stocks so that brood continues to be produced and hatched, giving a large population of young bees, and calling upon bees deprived of their combs and brood to start afresh.

How to find Condemned Bees.—In the neighbourhood of towns or of the residences of experts the skep-owners are generally so well looked up that even if they have not learned to take their own bees, they have generally promised them to some advanced bee-keeper. It is therefore advisable to go right away from railway stations into quite remote country places, and by making a few inquiries some few stocks may be found. We have often discovered bee-keepers whom we should not otherwise have known of by noticing bees on the wing. A brisk flight denotes leaving home, a slow, heavy one near the ground, returning home. By looking after homeward-bound bees a cottage may be spied in the line of flight, and a call will result in the discovery of a few stands. Then a little tact is required to overcome prejudices. If the cottager has never had his bees taken from him before, he will most likely be suspicious that he is going to be 'had' in some way. He cannot understand why any one should take the trouble to look after him and his bees. The offer of 6*d.* or 1*s.* for each lot of bees, which would be valueless to him dead, will go far

to overcome his prejudices. If you have with you the necessary means, they may be taken then and there, but generally it is better to go and find the bees one day, and go another day with a conveyance and take them. (Caution.—Don't leave your horse too near the bees, and leave some one in charge of him, for fear of an accident. *Experientia docet.*)

How to take the Bees.—There are several ways of separating the bees from the combs. One way is to place the skep inverted in a tub covered by another, and gradually fill the tub with water. As the water rises in the hive, the bees retreat before it into the upper hive. This plan has many objections, among which are that all unsealed honey is spoiled, and unless the combs are at once taken out, they and the pollen will become mouldy. Another plan is to shake the bees out by suspending the skep, mouth down, by a rope to the bough of a tree; raising it and letting it fall to the end of the rope with a jerk, when the bees will be dislodged and fall on a sheet spread under them. We have never tried this plan and should feel rather doubtful of its success. There seems great danger of the combs also falling out, but possibly in practice this may not be found to happen. Another plan is by fumigating with puff-ball or frog's cheese, the vapour of which stupifies the bees without killing them. The hive to be taken is placed in its natural position over a cheese-box, and the junction made air-tight by a roll of canvas. The smoke of the puff-ball, which may be burnt in an ordinary smoker, is injected into the box. The bees drop down into it, and, on exposure to the air, recover and ascend into a skep placed over them. This is a tedious plan and has the objection that many bees remain packed in the cells, and on recovering themselves after delivery to the owner, fly about and cause much annoyance.

Then there is the well-known plan of open driving, which is so fully described in every modern work on bee-keeping, and so constantly exhibited at shows, that we need not refer to it except to point out that the arrangement of a pail on a table is not the best. It is always advisable to be able to drum the crown of the skep, which of course cannot be done if it rests in a pail. It is also back-breaking work for any one of full height and middle age to stoop for long over a table. Three broomsticks confined by an iron ring about one-third their length from the top, the lower ends pointed so as to hold the ground and confined by a rope to prevent opening too far, form a most convenient tripod. The skep can be arranged at any angle resting in the upper tripod, and is brought nearly on a level with the face, saving much trouble and fatigue. On first turning up the skep throw a sheet of canvas damped with a solution of pure carbolic acid over it. It will prevent the bees rising on the wing and send them down to gorge, putting them in good condition to run. The plan of close driving differs from open driving; in that the two skeps touch all round and are bound round the junction by a towel or canvas. The other details are the same. Open driving is much to be preferred. The objections to driving, either open or close, are the long time occupied, the difficulty sometimes experienced in getting the bees to run if there is a cold wind, or if they are queenless, or the hives not filled with combs, and the danger of setting up robbing by the prolonged exposure of the combs while the rightful owners are being evicted.

There remains one other method, known as 'bumping,' by which instead of the bees being taken from the combs, the combs are taken from the bees. This plan has been fully described in our columns, p. 314 current volume, and it is unnecessary to repeat it.

General Instructions.—Get to know from the owner the history of each lot you are to take, and proceed to mark them. Put one stone for a stock, two for a swarm, three for a cast, and four for a virgin swarm, *i.e.*, a swarm from a swarm. A stock which has swarmed has a young queen, and so has a cast and a swarm which has thrown a swarm. A first swarm has an old queen, a virgin swarm has the old queen. Take with you a few boxes to put the spare queens into. A piece of wood, with an inch hole bored by a centre-bit and a small piece of sponge saturated with honey fastened into it and a cover of perforated zinc, is a simple one.

Proceed as described on p. 314. The object in closing all the hives is to prevent robbing.

Packing.—Having taken the bees either by driving or bumping, pick out the old queens and as many young ones as you wish to preserve. Leave the bees on their old stands until clustered in the skeps. It is as well to take those nearest home first, and return over the ground and collect them. If you drive, either open or close, you must take with you as many skeps as you have stocks to take, as each will have to be left on the stand to cluster. Have some squares of cheese-cloth or paper-hangers' canvas ready cut and some string. Lift carefully one of the skeps containing the bees so as not to disturb the cluster, put it gently down on the ground mouth up, lift another, place it on the first mouth to mouth, lift both together and give them a violent thump on the ground so as to loosen the foothold of every bee in the open skep. Throw it away, put a square of canvas over the lower one and tie down. Have your canvas and string already to hand and look sharp. Of course you will unite one lot with a queen to one without one. The bees will not fight, having nothing to defend. As skeps are awkward to carry, it is much better to take boxes to bring home the bees in. Lobster boxes or starch boxes with a partition across the middle will hold four lots, two united on each side. Have some canvas ready nailed on to the partition, and have ready some lathes and French nails. After uniting two lots in a skep as above take the one with the bees in it, give it a good bump to loosen the foothold of the bees and at once pour them into your box, turn the canvas over and nail down with the lathe. Again, have everything ready to your hand or the bees will boil over before you get them nailed down.

Bringing Home.—Let the skeps travel mouth down, laid across sticks, so that air can enter. Boxes are better carried on their sides, so that the canvas face is vertical.

Hiving.—Arrange your hives with the frames of comb in them, the dividers in their places, and the quilt on. Allow to each lot of bees, being the contents of two skeps, five or six combs, or, if very good lots, seven. Place those which are wholly filled outside, and those having most empty cells in the middle. Lay a large board sloping up to the entrance. Take a box, and without disturbing the cluster carefully remove the canvas from one side, shoot the bees with a sudden jerk on to the board, and let them run in. The cluster on the other side will of course be broken up; these must be kept down by successive blows while the canvas is removed and then shot out.

Always hive Condemned Bees in the Evening.—This is important. If hived in the morning they will fly all over the place, not knowing their surroundings, and be lost, at the same time causing much annoyance in the neighbourhood. If hived at night they will settle down and mark their hive on flying in the morning.

Feeding.—Give some food when hiving, and continue the supply of thick syrup until each lot of seven combs has the four outside combs nearly filled and the others about one-third down. The amount of syrup given will depend upon how far advanced towards storage the combs which you were enabled to spare for them were. Let all feeding be finished by the end of September.

The spare young queens obtained by uniting may be utilised in re-queening any stocks you may have with old queens.

While feeding let the quilts be thin and porous, to

permit the escape of the vapour from the evaporation of the excess of water. When finished make winter passages, push the combs to the back of the hive, placing the divider in front; cover up warmly, with a watertight roof over all, and leave alone for the winter, in the assurance that you have done all you can to ensure success.

USEFUL HINTS.

Cloudy skies, heavy rains, and cold nights, have prevailed of late, and our bees have had few opportunities of leaving their hives. Except in heather districts, the honey season of 1886 has ended. In the eastern counties the yield is decidedly below the average, but from the north and midlands we have better reports. Winter preparations will soon be the order of the day, and, therefore, *extracting* should be carried on vigorously, and completed as soon as possible; advantage being taken of every fine day for the work, the extracted combs being returned to the hives for the bees to clean. This process sets the queens breeding, and if carried on later than the present month colonies will go into winter quarters with too many newly hatched and hatching bees, which do not winter so well as those a few weeks older.

Carpets, felt, or other hive coverings, should be provided, that all may be in readiness for the approaching winter.

Robbing, which is often started by late extracting, must be guarded against. Reducing the size of entrances by perforated zinc, as recommended in last 'Hints,' should not be neglected: and if an attack upon any hive has commenced, the plan of placing glass before the entrance will generally put a stop to the inroads of the raiders. A piece of glass of sufficient length and width to cover the entrance is provided, the lower edge of which rests upon the alighting-board, one inch from the hive, and the upper edge on the front of the hive. This will enable the bees of the hive to go in and out at the sides of the glass, but the robbers, attacking, fly straight for the entrance and are suddenly checked and daunted by coming into contact with the glass, and, if the attacked colony be fairly strong, they will not allow them to enter at the sides.

The entrance on one side of the glass may also be closed if found necessary. All nuclei and weak colonies should be thus protected before raiding begins.

Driving Condemned Bees.—Notwithstanding all that has been written in favour of 'bumping' we still follow, and much prefer, the old-fashioned system of driving. By the aid of a little carbolic solution an average of five minutes for each hive suffices to clear it of bees, and there is no 'messing about' with broken combs, running honey, and incitement to robbing, to say nothing of crushed and drowned bees. After the bees are driven out, the skeps are taken into the cottage or an out-house, and the combs are cut out clean with honey-knives. For many years we have followed this plan, and have always been asked to go again; indeed, we are often so besieged at this season by applicants that it is impossible to oblige all. Good drivers, carried out with celerity, neatness, and cleanliness, are always appreciated by the cottager. The union of at least two—preferably of three—fairly populous colonies of condemned bees, with a young queen at their head, is desirable for placing upon combs, from which the honey has been extracted, and feeding up to the required weight should be carried out at once. Top feeding at this season we prefer, as least conducive to robbing, and easy of performance, with little or no disturbance of the bees.

Queen Introduction.—Of introducing by chloroform Mr. Leach writes: 'I received from Mr. D. A. Jones ten queens, part Carniolan, on the 6th July, and I introduced them with chloroform the same evening; and the following night I took a peep in to see if all was right, and found them, without an exception, hard at work. One had filled two cards with eggs.' This system, on Mr. Jones' recommendation, seems to be in much favour with Canadians.

How to Find the Queen.—Use no smoke: open the hive very quietly, brushing a little carbolic solution over the frames. Obtain lateral space for moving frames by withdrawing the division-board, and an outside frame. Draw back all frames until you come to the brood-nest. The queen will generally be found on a comb containing fresh-laid eggs. If, during these operations, any jarring take place, or, through the whole quilt being stripped off at once, light be too suddenly admitted, the bees and queen becoming excited will run from comb to comb, and the latter will probably be found on the outside comb, or on the floor-board or side of the hive. Smoke injected at the entrance will always render the quest more difficult.

While searching for a laying queen the parts of the combs containing brood and eggs, especially the lower parts of such combs, should be first examined. Very rarely indeed will the queen be found on sealed honey cells, unless she has been greatly disturbed or alarmed.

It is rarely necessary to obtain an interview with a virgin queen, and very difficult in a full colony, and it is an easy matter to overlook one, even in a small hive or nucleus, so little do they differ in size and appearance from a worker bee, so quick are their motions, and so little attention is paid to them by the workers. From 2 to 4 p.m. the young queens usually take their flight. They should not be sought, therefore, during those hours. After the departure of a first swarm, or the removal of the old queen, by any other means, if anxiety be entertained as to the fecundity of her juvenile successor, the discovery of eggs deposited regularly in any comb is sufficient evidence of her presence. Virgin queens are far more sensitive to light than others, and will often flit from comb to comb, and from side to side of the hive so rapidly that even an expert may be deceived as to their presence or absence. The best colony for a beginner to practise upon is one containing a two or three-year-old queen, with a rather sparse population, and if the attempt be made when the greater part of the adult bees are at work in the fields it will be more likely to succeed. It is better not to invert the comb when searching for a queen, since it always disturbs the bees and causes them to run, and to cluster.

The further side of the comb may be easily inspected by turning the right hand under the left elbow, and bringing the left hand well forward. We need scarcely add that an Italian, or any queen of a yellow race, is more easily found than a black one, both on account of colour and quietness under inspection.

THE CONFERENCE.

Fourth Paper.

The second day's conference at the Colonial and Indian Exhibition took place on Wednesday, the 4th August, at two o'clock, in the Conference Hall, when among the audience present were Mr. T. W. Cowan (in the chair), the Rev. J. Lingen Seager, Mr. Walker, Captain Campbell, the Rev. F. G. Jenyns, the Hon. and Rev. Henry Bligh, Mr. Hooker, Mr. Garratt, Mr. Lyon, Mr. Zehetmayr, Mr. Griffin, Mr. Henderson, &c.

During the proceedings the Baroness Burdett-Coutts (President of the Association) entered the Hall amid cheering, and remained an interested listener for a considerable time.

The first paper was read by the Rev. J. Lingen Seager, as follows:—

THE ORGANIZATION OF COUNTY ASSOCIATIONS.

The objects of a County Association, as defined by the late Mr. Herbert Peel, are 'to encourage amongst the residents of the county, and especially the cottagers and

labouring classes, a more humane, intelligent, and profitable system of bee-keeping.'

We have lately been told that these objects have been attained, or at least that the work of the Associations is done; but perhaps the statement was made by a county secretary who found his work too much for him, but was not able to find a successor. The contradiction lies in the fact that those County Associations which have been most successful are still hard at work. If it is true that no such institution is worth bolstering up which is not self-supporting, the converse is probably not less true that that institution which continues to be self-supporting has still work to do. So that it appears that the really practical questions are, not 'What has been done?' so much as 'What still needs to be done?' and 'How best to do it?'

With reference to Mr. Peel's definition, which I have quoted above, it is frequently said the County Associations are too much given to working amongst the so-called upper 'classes of the residents,' and that they have failed to reach the labouring classes. To a certain extent, no doubt, there is at least an appearance of truth in this. But the fact is, as is well known by those who have had the work to do, that it is very hard to get at the labouring classes, that doing so must be a work of time; and there are many who think that this is best done indirectly through the more intelligent, and those who can better afford the first outlay, which in most cases is regarded as experimental.

The average English labourer is very slow to give up the ways of his father and grandfather; and it is only gradually, as he sees others adopting new methods with success, that he can be induced to do so; he has little or no capital at his command, and is not easily to be persuaded to spend any part of his hardly-earned weekly pittance upon what he regards as 'new-fangled notions.'

Bee-keeping is now constantly spoken of as 'an agricultural pursuit'—that is, I suppose, as a pursuit which may add to the slender incomes of men employed in agriculture. If it is so, the Associations have yet much to do in many counties—my own amongst the number—for it is chiefly in the gardens of small farmers and labourers that we continue to see rows of dilapidated skeps, and may often in the August evenings still smell the murderous sulphur. These people still think it worth while to keep bees, but have not yet been induced to keep them upon the most profitable system. Amongst the artisans a great deal has already been done, and though in some instances in agricultural parishes, the wooden hive is to be seen under the garden hedge, there is still plenty of work for us to do. The success that waits upon the task of doing this work in the future must depend almost entirely upon the organization of County Associations. Though having had some experience in this direction, I write with considerable hesitation, knowing as I do that there are many of wider experience, and much more competent to speak than myself, and lest I should appear to be laying down the law or criticising the work of others. To do so is certainly not my desire.

It is generally accepted that the working body of a County Association should consist of a committee, county secretary, secretaries of districts, local advisers, and experts —one or more.

On the composition of the committee much more depends, I take it, than is often supposed. It is generally the custom for the members at the annual meeting to elect to serve upon the committee the leading bee-keepers of the county; and, as far as it goes, this is well, but does it go far enough? That there should be practical and scientific bee-keepers upon such committees 'goes without saying,' but it is equally necessary that there should be upon them men of business habits, men who will not be satisfied with allowing their names to be placed on the list, but who will attend the meetings, and when there be ready and able to transact the business.

The number of times which a county committee need meet in a year is not very great, but that the various members shall be present to represent the needs and interests of the various districts in which they live is all important. There are questions to be considered also at all such meetings which need to be handled from a business point of view, and can be as well treated by those who know little or nothing of bees as by the *savant*. My point is shortly this: that the committee should be one in practice, not, as I fear it too often is, one in name only. 'We cannot do better than leave this to our secretary,' is all very well, and in some cases perhaps the best thing to do, but it is not a solution of all difficulties, and often very hard on the honorary secretary, who already has responsibility enough.

It is not easy in every Association to find a man who has the necessary qualifications to act as secretary, and who, at the same time, has the requisite leisure at his disposal to fill this onerous as well as honorary post. Most men who are equal to such work already have their hands full with work of even more importance. But it often occurs that one who has the necessary qualifications, but not the leisure, would undertake the work if he were allowed the assistance of some one to write letters and do the routine work. In most places there are to be found young men who for 5*l*. or 10*l*. a-year would gladly undertake all that would be required. I have known this plan work admirably, and so venture to offer it as a suggestion to those Associations who may have a difficulty in securing the services of a good honorary secretary.

The next difficulty is that of obtaining district secretaries who are ready really to work for the cause. In my own county, with one or two exceptions, I have found that men of the class of gardeners or artisans have been the most active and useful; they are more 'in touch' with the labouring classes, and are better able, so to speak, 'to leaven the lump' than those who are in some sense above and outside of it.

From the same class should be drawn, if possible, the local advisers, a most invaluable part of a county organization. The local adviser needs to be a man of great good humour and unselfishness, a man who does not mind going a mile or two after his day's work, or popping into a neighbour's for a few minutes in the dinner-hour. It may be hard to find such men, but they are to be found, and without them, I venture to think, an Association will not make much way amongst the labouring classes.

The selection of an expert, again, is a matter of no slight importance. Every man who has a third-class certificate is not calculated to make a good expert. The spring tour of an expert, who was himself a first-rate manipulator, has within my own knowledge been productive of more harm than could be undone in many seasons. Amongst the agricultural population there still remain many absurd superstitions about bees. To ridicule these is not always the way to dispel them; they must be treated tenderly, and confidence must be gained before the scientific methods can supplant them, and to do this much tact is necessary.

I remember an instance in which an expert while examining some cottagers' skeps talked very learnedly about queens, eggs, and larvæ, and made fun of the primitive notions of the simple-minded people. The result was that the whole village was up in arms about the man 'who stole all their bees' eggs and sold 'em to the gentlefolks;' and the following year nothing would induce them to allow his successor to touch a single hive. This was four years ago, and in that village they all still burn their bees, and believe that bar-frame hives are an invention of the devil.

Great good has resulted in many districts from lectures, and as an initiative they are no doubt of the greatest value, but they need to be followed up by what I can best describe as social meetings of bee-keepers—'conferences' is perhaps too grand a name. The bee-keepers of a neighbourhood may be gathered round a table in some central house; and with the help of a suitable agenda paper and a skilful chairman, may soon be led to discuss freely many questions of interest. The labourer and his wife like to be asked to attend such meetings, and they like to hear others, and will often themselves add much to the interest and amusement of the meeting. Many prejudices and superstitions may thus be dispelled, and a great deal of information diffused. The arranging of such meetings may be considered as an important part of the local secretary's duties in the slack time in winter.

With regard to the bee tent. In many districts the manipulation of bees in the tent at shows has lost its interest; most people who care to do so have already seen all there is to see.

But there must in rural districts still be many to whom a sight of the performance would be not only new, but in-

structive. What appears to me a very practical suggestion has been made to me by one who has had great experience amongst genuine labouring men—it is that the bee tent should be sent round during the season to outlying districts and pitched on the village green; if suitable occasions were chosen and due notice given, I believe that great good might result.

By County Shows much has indeed been done in the way of exciting friendly competition, and improving the form in which honey is got ready for the market; but, after all, the number of people who can and do send to the County Show is comparatively small; and year after year the same names are to be found upon the prize list. Many are unwilling to exhibit unless they can carry their honey to the stage themselves; and thus many who would like to do so are prevented from showing by the accidents of distance and expense.

To meet this difficulty a plan has been tried by one of the counties, which so far has been attended with success. For the year the County Shows have been abandoned, and the money which would have been spent upon them, has been given in honey prizes at the various Horticultural Shows throughout the county; by this means bee-keepers in all districts have had an opportunity of both showing their own honey and seeing what others are doing; and as amongst cottagers the good bee-keeper is generally also a good gardener, and therefore probably an exhibitor of flowers and vegetables, one journey has sufficed to take the produce of garden and hives to the show.

In some counties, and especially in Wales, an initial difficulty has been found in floating Associations. People of the class which it is most desirable to get hold of are very often slow to join any society, especially if asked to pay even the smallest subscription, *unless* they can see distinctly some tangible good which will result from their doing so. It lies, therefore, with the promoters to draw up an attractive programme, in such a form as to be readily understood. This is not so easy a matter as it may seem, especially when there are no funds to be relied upon to carry out the undertakings.

For instance, the promise of a sight of the *Journal* each week does not convey to the farm-labourer's mind the vision of any great pleasure or profit—he is not much of a reader at any time, and he is scarcely to be persuaded that if he did read the *Journal* he would gain much from it.

Again, an expert's tour is an expensive matter; and the promise of a visit from a man of whom and whose powers the county folk know little or nothing is scarcely likely to draw from him his 2*s*. 6*d*. or 1*s*.

Those who are best acquainted with the agriculturalist will tell us that we must first try and gain his confidence in some way before he is asked to join—talk to him about his bees, or better still induce him to talk about them—give him a little advice or help without making any favour of doing so—let him gradually feel that he has something to learn—tell him something of what others are doing, if possible exciting his interest in it; then, if he is destined to become a member at all, the proposal will come from him himself.

There is one point to which I especially wish to call your attention, and upon which I much hope we shall have a discussion; I refer to the increasing difficulty of selling honey. To small extent the Honey Companies are doing this. But what we want to do is, if possible, to bring the consumer and producer together, without the intervention of the middle man, who practically absorbs all the profits. It may be said that this is not part of the work of a County Association, but I am much mistaken, many of the Associations will before long find themselves obliged to give this question their best consideration, and to take some decided action in the matter. The cry is constantly making itself heard, 'We cannot sell our honey;' and I believe that if we cannot find some way of helping the cottagers to do so, we shall lose them as members.

It is all very well to say that it will pay the labourer to produce honey for the consumption of his children. So it may; but he will not be satisfied with this. When he was induced to buy his first bar-frame hive, he was told that in time he would 'pay his rent with his bees,' and he is not going to be put off now by an assurance that honey is a valuable article of food for children, and that keeping his bees he can reduce his butter bill. I must confess that I am not prepared with any scheme for the solution of this difficulty. I have brought it forward in order that it may receive the attention which it seems to demand at this period of bee-keeping.

One short paragraph more, and I have done. If our County Associations are to continue to flourish, and, what is the same thing, to do their work, individual members must come forward and help more than they have hitherto done. It must not be supposed that the work can continue to be done by honorary secretaries alone, increasing as it does each year; or that *that* can rightly be called an Association which depends for its success upon the efforts or genius of one man. The very name of Association implies mutual help to a common object; that in the long run the success of Association will be exactly in proportion to the number of persons of all classes who are willing unselfishly to give the necessary mutual help.

Discussion.

Captain Campbell said the subject was very interesting and important, and one that was really worthy the attention of all bee-keepers. It was almost impossible for ladies and gentlemen living in the country to know how much good could be produced by the simple introduction of a little local bee show. The Association had in all the counties a portable bee-tent capable of holding forty or fifty people, and it was perfectly amazing what sympathy and interest could be raised in any locality where an expert gave a short lecture with practical illustrations in the management and manipulation of bees. The poorer classes would be ready and willing to learn if they could have the matter properly put before them. That they could not do unless some little interest were taken in their education by the country residents of the district. What was wanted was that some one should go with a tent and a hive of bees and manipulate them before the eyes of the peasantry. It was remarkable what effect such a proceeding had on their minds. He remembered once hearing an astonished countryman say, 'What did you do with them bees, measter, before you brought them in?' Another said, 'I'll give you a bob if you'll tell me what you doses them bees with before you handles 'em.' A little practical work before the cottagers was worth any amount of books on the subject. The members of the Association were persuaded that if the cottagers could be induced to make bee-keeping the hobby of their leisure hours much of their money would be saved as well as time often wasted at the 'Pig and Whistle.' A great deal of the prejudice against bees was being subdued, because the value of those insects in the cultivation of flowers and fruit was an established scientific fact, recognised everywhere, and especially in Australia and New Zealand. He was glad to say that the Science and Art Department had begun to see the importance of the question, for in their examination papers questions were inserted bearing upon it.

Mr. Walker thanked Mr. Seager for his valuable paper, and said that he had spent a great deal of time during different seasons in visiting the small bee-keepers in his locality who required his assistance—in fact, to such an extent was his time occupied in looking after the bees of his neighbours that his own became neglected. He recommended little garden conferences, where a small number of persons met together and interchanged views. As a medical man he mixed with all classes and conditions of men, and it was astonishing that even at the present day the knowledge of reading and writing was not very great. No doubt as education advanced their cause would advance also. He thought the question of marketing honey, raised by Mr. Seager, was one with which the Secretaries of County Associations should not be burdened. Their work was already too great for honorary officials without adding to it the task of bringing buyer and seller together. Lectures were dry, and

there was generally an air of langnor about conferences. He thought little conversational réunions would be productive of the most good. He was glad that the number of associations was being augmented, because they could organize the meetings to which he referred.

Mr. Martin fully indorsed Mr. Seager's remarks as to the difficulties which County Secretaries had to contend against. He was passing through a village in his district on one occasion when a man came running after him and said, 'I wish you would come and look at my bees; they are hanging out all over the hive, and I can do nothing with them.' He (the speaker) went as requested. He drove the bees off the stand, and drummed an artificial swarm in the middle of the turnpike road, and then explained the manipulations to the assembled onlookers, who were somewhat surprised because no tent, no veil, and no gloves were used, and nobody was stung.

Mr. Candey thought their object would be best served by the spread of County Associations. His interest in bee-keeping was first excited on visiting the Healtheries, after which he found his way to Mr. Abbott's place at Southall, and obtained a lot of useful information from that gentleman. He had come fresh from the successes at Portsmouth, Norwich, and Southampton, and had been placed in charge of a district about Portsmouth which required considerable working. He did not believe they could find within ten miles of Portsmouth half a dozen persons who could drive a hive of bees. There sat behind him at that moment a cottager who had taken the first prize at Portsmouth and Southampton from the amateur show. He hoped the County Associations would go on and prosper, so that the superstitions which abounded might be got rid of. He then related some amusing incidents which had come under his own experience relative to the credulity and superstition of the peasantry regarding bees.

The Chairman thanked Mr. Seager for his interesting paper, and said that that gentleman spoke with authority, because he represented one of the best counties in England with respect to bee-culture.

ASSOCIATIONS.

SOMERTON, SOMERSET, HORTICULTURAL AND POULTRY SHOW.

The twelfth annual exhibition in connexion with the Somerton Horticultural Society, and the fourth of the Poultry Show (more recently established), took place on Wednesday the 18th in the beautiful park of Somerton Erleigh, the country seat of Colonel Pinney, who also threw open the gardens to the public; this latter favour is a treat always appreciated by the visitors to the show.

The show of honey was very good (considering the season), there being five entries of comb honey in the amateur class and two in cottagers; and in extracted honey six entries in former class. What was exhibited showed the advance of modern ideas in this pursuit, as it was bottled in nice 1-lb. or 2-lb. bottles neatly tied over with dry parchment, and nicely staged. J. Isherwood was the judge. His awards seemed to be in accordance with the general opinion of those interested. The awards were as follows:—

Amateurs' Class.—Super from straw skep: 1, W. Wiggett, 2, W. Wiggett. Comb honey, 1 doz. 1 lb. sections: 1, W. Wiggett; 2, T. C. Head, Somerton. Extracted honey, 1 doz. 1 lb. bottles, or 6 2 lb. bottles: 1st, T. C. Head; 2, W. Wiggett; 3, Miss Burke; extra, 4, Ralph Nutt Compton. *Cottagers' Class.*—Super from straw skep: 1, Geo. Collins; 2, no award; 3, Thos. Burt, Long Sutton. Comb honey—1 doz. 1 lb. sections, no award. Extracted honey—1 doz. 1 lb. bottles, or 6 2 lb. bottles, no award. Collection of queen wasps: 1, not less than 100, no award; 2, ditto; 3, not less than 50, Herbert Crump, Kingsdon.

STAFFORDSHIRE BEE-KEEPERS' ASSOCIATION.

The Annual Show of the above Association was held this year at Wolverhampton, in connexion with the Shropshire and West Midland Agricultural Society's Show in a marquee, on July 21st, 22nd, and 23rd.

The following is the list of awards:—

Class I. Bee appliances:—1st, Abbott Bros.; 2nd, A. W. Rollins. II. For best and most complete hive (bar-frame):—1st, Abbott Bros.; 2nd, A. W. Rollins. III. For best six 2-lb. or twelve 1-lb. sections of comb honey:—1st, and Silver Medal of B.B.K.A., H. Wood (Lichfield); 2nd, and Bronze Medal of B. B. K. A., T. Leese (Stone); 3rd, Isaac Peill (Hixon); H.C., Mrs, Critchlow (Maer). IV. For best exhibition of 12lbs. of run or extracted honey:—1st, and silver medal of Staffordshire County B. K.A., Elihu Clowes (Blackbrook); 2nd, and Bronze Medal of same Association, Elihu Clowes (Blackbrook); 3rd, Mrs. Critchlow (Maer); H.C., Mr. Smith (Tettenhall). V. Best stock of bees in straw skep:—1st, J. R. Critchlow (Maer). VI. Bees in Observatory hive:—1st, A. W. Rollins; 2nd, Abbott Bros. VII. Best super:—1st, Abbott Bros.; 2nd, Abbott Bros. VIII. Best exhibition pure bees-wax, not less than 2lbs.:—1st, Mrs. Critchlow (Maer); 2nd, A. W. Rollins. IX. Best exhibition of honey in any form:—1st, H. Wood (Lichfield); 2nd, T. F. Hulme (Trentham). X. Best exhibition of honey in any form, by artisan or agricultural labourer, offered by Hon. Secretary, A. H. Heath, Esq.:—1st and 2nd (Equal) Isaac Peill (Hixon), and T. F. Hulme (Trentham).

GLOUCESTERSHIRE BEE-KEEPERS' ASSOCIATION.

(Gloucester District.)

The first Exhibition held in this district took place conjointly with the Tuffley and Whaddon Flower Show held on August 12. Careful preparations had been made the day before, and a spacious tent for the show of honey had been erected, at one end of which the bee-tent of the Association was pitched.

Notwithstanding the cold and wet season, which had prevented many districts in the county from sending any exhibits to the show, and the poor display there had been at the County Show held at Cirencester at the annual meeting of the Gloucestershire Agricultural Society, it was gratifying to find that a quarter of a ton of honey was staged, this constituting the largest display at any show since the formation of the Association.

The judging commenced about eleven o'clock and occupied some three hours, being carefully and ably performed by the Rev. Dr. Bartrum, who had kindly consented to undertake the onerous duty. The display of honey was arranged round three sides of the tent, being well shown off in white paper, the staging being draped with pink. Many of the exhibits of honey were good in quality. Much of the sectional honey was exhibited in the somewhat new fancy boxes glazed on both sides, and being of various tints thus greatly adding to the effect. A considerable portion of the honey was from the white clover, which contrasted well with the sainfoin, bean, blackberry, cranberry, and other shades displayed. It was pleasing to see that the exhibits of the cottagers, although not numerous, were of good quality, especially in the class for extracted, where there was some keen competition, the first prize being eventually awarded to Mr. T. Dadge, Hempstead, for a sample of clover honey. All the cottagers' honey staged was taken from bar-frame hives, which shows a decided advance in bee-keeping.

A new feature for this County and one worthy of mention is the class for collections of honey. There were three entries in this class, and two out of the three were especially noticeable for the quantity of honey, some seventy or eighty pounds, and also for the tasteful and attractive manner in which they were displayed. The centre of the tent and the side not occupied by honey

were filled with a great variety of bee-furniture kindly sent for the occasion from the manufactory of Mr. E. J. Burtt, the expert for the Association, who also officiated in the bee-tent.

During the afternoon bees were driven in the tent, and bar-frame hives opened, and their management explained by the expert. The tent was well filled with visitors who took great interest in watching the bees exhibited, and seeing the wonderful ease and safety with which they could be handled in the bar-frame hive.

More prizes were given away in some of the classes than was the original intention, as many of the exhibits were very good for the season. The following are the names of those to whom they were awarded:—

Class I.—For the largest, best, and most attractive display of honey in any form or forms: 1, Mr. E. A. Brown, Tuffley; 2, Messrs. Mills Bros., Dymock.—II. For the best 12 1-lb. sections of comb honey: 1, Mr. E. A. Brown; 2, Mr. T. Butler, Bristol; 3, Mr. W. J. Smith, Beckford; 4, The Lord Sudeley.—III. For the best exhibit of 12 1-lb. clear glass jars of run or extracted honey: 1, (equal) Mr. E. A. Brown and Mr. W. Zachary, Cirencester; 3, Mr. J. B. Butler; Miss E. C. Hayward, Stonehouse.

For Cottagers only.—IV. For the best 6 1-lb. sections of comb honey: 1, Mr. Carter, Gloucester; 2, (Equal) Mrs. Shewell, Brookthorpe, and Mr. Jones, Gloucester.—V. For the best 6 1-lb. glass jars of run or extracted honey: 1, Mr. T. Dadge, Hempstead; 2, Mr. Jones; 3, Mr. T. Dadge.

STRABANE BEE SHOW AND HONEY FAIR.

This show was held in connexion with the Dog, Poultry, and Flower Show, on 28th and 29th of July. There were fifty-two entries, and the competition in most classes was very keen. Evidently modern bee-keeping is making good progress in this neighbourhood. Mr. Robert Brown, Donaghmore, acted as judge. The following is the prize-list:—

Observatory hive, exhibited with stock and queen: 1, W. R. Orr. Super of honey over 25 lbs. (not sectional): 1, H. McElroy. Super of honey under 25 lbs. (not sectional): 1, W. McGhee; 2, R. Carseaden. Twelve sections of honey (1-lb.): 1, Miss Clarke; 2, S. R. Orr. Six sections of honey (1-lb.): 1, T. McGonigh; 2, W. McGhee. Six jars of honey: 1, G. Turner; 2, G. Turner. Best hive for general use in an apiary: 1, W. Lonsdale; 2, W. R. Orr.—*Special Prize.* Best exhibit of super honey produced in bar-frame hive, bought from W. R. Orr. Bar-frame hive presented by W. R. Orr: Dr. Britton with fifty-six 1-lb. sections.

Bees not under Control.—On Saturday, Aug. 21st, a man came before Mr. Chance, the sitting magistrate at Lambeth Police Office, and stated that he was in the employ of Mr. Jonsiffe, wine merchant and cordial manufacturer, of South Place, Kennington. For some days applicant was almost unable to attend to his work owing to swarms of bees coming to the place, and he wanted to know what he could do to prevent it.—Mr. Chance: Where do the bees come from?—Applicant: From a place not far off where hives are kept.—Mr. Chance: Why do they come to where you are?—Serjeant Underwood: The bees no doubt, your worship, are attracted by the cordials and spirits.—Mr. Chance: I suppose they prefer this kind of thing to flowers. (Laughter.)—Applicant: I don't know, but I do know I am often stung and unable to get any rest from the pain. I could not get on with my work to-day owing to the bees.—Mr. Chance: I am afraid I cannot assist you. The bees are not included in the list of animals to be muzzled or kept under control. (Laughter.) They can scarcely be described as ferocious. (Renewed laughter.)—Applicant: But they sting very sharply.—Mr. Chance: I am sorry for it, but I do not see how I can help you. There have been no regulations at present to keep bees under control. Perhaps you might trap them or kill them.—Applicant: I have killed numbers, but more seem to come.—Mr. Chance: Perhaps you could protect yourself by putting on a wire mask, and wearing gloves.—Applicant: I don't know what to do. I have had to go to a doctor in consequence of the stings.—The applicant thanked his worship and withdrew.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The Editor of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C." All business communications relating to Advertisements, &c., must be addressed to Mr. J. Huckle, King's Langley, Herts (see 2nd page of Advertisement.)

*** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

QUEEN INTRODUCTION.

[534.] I must plead guilty to not having read the whole of the correspondence on this subject that the *Journal* has recently contained, but I have seen enough to cause me to sympathise with the feeling of surprise to which Mr. Rudge gives expression. All bee-keepers of prolonged experience who desire to advance must look upon every form of queen-cage as an evil only to be tolerated until we discover, or are taught, some safe, ready, and immediate method for the introduction of alien queens. I am the inventor of a cage which has never failed, and which has all the advantages of the Peet and Raynor cages combined. It does not damage the combs; it cannot slip from its place. The queen frees herself, but gladly would I see the cage with every other relegated to some apicultural museum of antiquities, if direct introduction be made not even absolutely but practically safe. Mr. Simmins, who is, I believe, the owner of the largest apiary in Great Britain, has recently guaranteed the introduction of all queens sold by him if his directions be followed. A very practical question thus faces us at once. Is he justified or not in the extreme confidence which this guarantee seems to indicate? Those who have experimented on his lines should strive to enlighten others on this point, and I therefore write.

I had three failures with many successes in direct introduction before Mr. Simmins added the direction to keep the queen thirty minutes by herself. Since this addition, with about forty trials, most of which had no practical object beyond experiment, success without a variation has followed every attempt. It is stated by some in reference to this matter that the stock to receive the new queen must have been a certain number of days or hours queenless, or that queen-cells absolutely bar success. I find these ideas inaccurate, and so give three typical cases only, which will seem at least to show that Mr. Simmins has provided us with a method which for actual work in the apiary needs no improvement.

On Saturday night, July 10th, I received a Cyprian queen from Mr. Benton. I was to be away from home on the Sunday, and had no stock queenless save one of Syrians, which had had a swarm taken from it on the Wednesday week previously. (In parenthesis, let me say, Syrians I have discarded as inferior to some other races.) I was posed for a moment by this query: Should I try Simmins's method in a stock with many queen-cells near maturity, or should I wait to make other arrangements on the Monday? I had learned to be confident. The Benton box, which had been ten days in transit, was opened, and all were in good condition. The queen was placed under a pipe-cover for thirty minutes. The bull's-eye was lighted, and borne by a friend to the Syrian stock. To turn over the back corner of the calico, add a slight puff of smoke, and run in the queen was the work of a minute, and all was left with that kind of confidence which cannot quite avoid a misgiving, for Cyprian queens have a certain value. On Monday evening, when the bees were getting quiet, I

looked after her ladyship. There she was, looking none the worse for ten days' journey, saucy and at home, with at least 2000 eggs; and for love of her the bees had pulled down all their Syrian queen-cells.

Ernest Homan, Esq., kindly says that I had been the means of his becoming a bee-keeper, through my lectures in the Geological Museum, Jermyn Street, he insisted upon my accepting two Albino queens on Wednesday, August 18th. I had now two queenless stocks, one raising Carniolan cells, and another having a fertile worker. It was to the latter that the first Albino must go. Operating as before, fertile worker notwithstanding, she was accepted right off, and has now (Saturday) a lot of eggs laid. And I ask by what caging method could she have been inserted, and if she had how long now would she have finished her solitary confinement? I have not possessed, possibly, during more than twenty years' experience twenty fertile workers, and none of us can claim very extensive acquaintance with them, but I have found that the older plans of operating with them are needless, since they subside if the bees are provided with eggs from other stocks in sufficient abundance to keep the workers busy. I had added eggs in this case, so cannot be absolutely certain that the fertile worker was present at the time of introduction.

The second Albino had to have a home created for her, so I divided a very strong stock of Carniolans the next afternoon, and because the queenless divided half seemed excited and in danger of being robbed, I as a precaution removed queen of less value, or at least of less rarity, than the Albino, from another stock about 7.30, and introduced this queen in thirty minutes to the half above mentioned, while at the same time the Albino took her place. The two stocks were thus queenless about four hours and thirty minutes respectively. Both queens are now laying.

Is it not preferable to let these facts speak for themselves? From what I have noticed, I strongly urge those of restricted experience who may try this method to avoid looking into the stock until the bees have ceased flying on the second day, *i.e.*, forty-six hours after introduction. Mr. Simmins says forty-eight hours. Is there any wicked fun in this, for forty-eight hours after means sixty, for at forty-eight hours the earth is in darkness? I feel that the evening of the second day may be permitted to relieve the anxiety some will feel. The bees are, as the daylight fades, giving up the caution which they need exercise when other stocks are in flight, and their mood is therefore not likely to lead to encasement.

All inventors of cages will not less deserve praise if a better plan puts the cage on one side, and so all alike can give direct introduction its due meed of praise, and, forgetting the things that are behind, push on to those that are before.—Frank R. Cheshire, *Avenue House, Acton, W.*

QUEEN INTRODUCTION.

[535.] I am indebted to Mr. Rudge for the favourable and flattering remarks with which he has referred to my paper on 'Queen Introduction.' With reference to his observations on the omission to state my views on Mr. Simmins' 'original' and 'later methods' of introduction, in that paper, I will merely remark, that, without referring to Mr. Simmins by name—just as I avoided mentioning the names of any other English introducers—I alluded to his 'Original Method' when I said that 'to me it appears that the insertion of a comb or combs containing hatching bees, brood, and a queen, appertains rather to uniting than to direct introduction, although in a certain sense the introduction is direct.'

Unless my memory deceives me, I think, after Mr. A. I. Root made the assertion that the system had been practised in America some years before Mr. Simmins advocated it in England, Mr. Simmins made a proposition that it should be designated by some other name than his own. This being so, I should scarcely have been justified in classifying it under his name. As regards Mr. Simmins' 'later method,' I gather from his *Non-swarming System* (of which he kindly sent me a copy) that the introduction of a queen '*quite alone*' consists (*a*) in keeping the queen fasting, and separated from her attendants for thirty minutes previous to introduction; (*b*) in raising a corner of the quilt, blowing in a little smoke, and allowing the queen to run down; and (*c*) in no examination being made for forty-eight hours. If it is any satisfaction to Mr. Rudge, or to Mr. Simmins, to know that I have introduced several queens successfully by this method, I have pleasure in stating the fact.

I did not refer to it, under a separate head, in my paper because I imagined that it would be generally supposed, and allowed, that if a queen could be successfully 'run into a hive' after driving back the bees, whether by smoke, or slightly quieting by chloroform, it was of little consequence whether the 'running in' took place at the entrance or at the upper corners or sides of the hive. My paper had already run to a greater length than I anticipated, or wished, and in consequence I was anxious to enter into detail as little as possible, and especially to avoid tautology or repetition. Mr. Rudge's allusion to my previous correspondence with Mr. Simmins in these columns calls for no comment from me. I will merely remark that, on controversial subjects, I fear there are few, who really have at heart the cause which they advocate, who do not sometimes express themselves more warmly than in their cooler moments they would have wished. As regards fasting queens, I generally practise it previous to introduction.—George Raynor, *Hazeleigh Rectory, Aug.* 21.

DIRECT QUEEN INTRODUCTION.

[536.] Having read with great interest the discussions on this subject, recently appearing in your valuable paper, allow me to state my experience, which is only that of a novice. I commenced bee-keeping last year, and this was my first try at queen introduction. I decided in favour of Simmins' method, and am glad to say was successful. The stock to be operated upon was a hybrid one. I removed the old queen in the forenoon and let the alien (an imported Ligurian) run in under quilt at 9 p.m. On examining two days later, I found the queen was accepted, and on the third day she had commenced to lay.—O. Puck, *Walthamstow.*

BEE STORIES.

[537.] If I may judge your readers by myself, the columns of the *B. B. J.* are particularly enjoyable when they contain an occasional 'sting story.' It may be very wicked, but it is very funny at times to have the opportunity of revelling in the ludicrous situation afforded by a narrative of misadventure resulting in some one getting well stung without a serious sequel.

The picture of old Hodge sitting on a heap of stones, 'sans culottes,' extracting stings from his legs, and anathematizing 'Parson;' or of the pony halting, kicking the trap front to bits, and upsetting 't'beeves into road,' followed by the mournful gathering up of a single hatful of bees; or, again, of our own tom-cat cautiously making inquiries at a hive door, and getting so stung in the south-east and south-west corners that he could not turn his body to right of him nor yet to left of him without finding it to be the *opposite* side which hurt most. These, I say, are so amusing, to me at least, that I conclude our comic papers are nowhere in comparison in the raising of a good roaring laugh; and I will run the risk of bringing down on my head vials of wrath from Miss Longface or

Mr. Sobersides for my cruel enjoyment of such scenes by narrating 'just one more.'

Last summer (1885), near the village of S—— in Yorkshire, a worthy couple had a present made of a swarm in a straw skep, and were duly warned that this year the bees would probably send off a swarm, which they must provide for by having a modern bar-frame hive in readiness. This was done. All happened as foretold. 'Swarm' came off, and by some means was housed in 'new hive.' But, alas! when the husband entered his house, possibly in search of refreshment, and in all probability having about him an air of triumph, his good lady said to him, 'Why, thoo hesn't putten twilt on!' 'Who ses?' says he. 'I say, for it's thear.' 'Soa it is, *al goa an' see*.' Go and see he did by lifting off the hive-cover in which the swarm was clustered. To 'drop cover on to grass' was the work of one moment; bees running up the investigator's legs was the work of another; a third moment (scarcely more) was occupied by our friend in divesting himself of that garment which prevented him getting at the bees as easily as they were getting at him. Tableau! Still there was no relief but 'confusion worse confounded,' if such words were in his vocabulary; for you know, Mr. Editor, bees *will* ascend, and they found their efforts rather facilitated than otherwise by the removal of the 'braches.' Need I say he was 'tenged' severely and that his eccentric gait on the following day provoked sundry amusing queries from his friends? The tale goes on, but I will conclude by saying all ended well by his complete recovery, sadder and wiser in the direction of 'puttin' twilt on.'—R. A. H. GRIMSHAW, *Horsforth, North Leeds.*

SKULL-CAPS AND VEILS.

[538.] In your account of the discussion on Mr. Jenyns' paper I am reported to have advised that a skull-cap should be worn by young people while bees are being manipulated. I intended to advise the very reverse. A veil attached to a skull-cap is no protection. Schoolboys often wear skull-caps, and it is important that teachers should remember this, so that their pupils may wear a wide-awake or some cap which keeps the veil at a safe distance from the face and neck. I mentioned this point because I had seen a boy, who was wearing a skull-cap and veil, severely stung, so that he could not be induced to take any further interest in bees.—E. BARTRUM.

BEE INSIDE A TELEPHONE.

[539.] One of the strangest and most peculiar faults came under notice for investigation the other day, my attention having been called to the fact relative to the Moss Bay wire, when I found a sort of booming which came on intermittently, very much resembling the distant race of the tide, and which rendered speaking and transmission of work almost impracticable. Having resorted to the usual method of dealing with such faults, viz., exposing new surface of carbons, and disturbing influences, and having thoroughly satisfied myself that the line was free from induction and that it was not picking up vibrations, it appeared conclusive that the fault must be in General Office, Moss Bay. When I came to examine the apparatus I found a huge bee inside the telephone, which, in trying to make good its escape, had become jammed between the sounding-board and the microphone. I cannot say how it came there. It might have been placed there designedly; but this was the fault. I have met some very tedious and technical faults in connexion with various telephone apparatus, but I never was done with a bee before.—T. ALLEN (*Copy of letter sent by the Post Office Telegraph lineman to his inspector, Mr. Hewett, Carlisle.*)

[We beg to thank Mr. R. A. H. Grimshaw for forwarding us this letter.—ED.]

DRONE MASSACRES.

[540.] As we have now reached the close of the honey harvest, and the unfortunate drones are being mercilessly slaughtered by their own sisters, I write to ask some more of our readers to make one or two observations and to give the results. Do they find the massacre *strictly simultaneous* in each hive, *irrespective of their varying conditions?* The conditions I have in mind are the following:—A young as against an old queen (both being fertile). A rich as against a poor hive. In this connexion it would be well to note whether any honey has recently been removed in supers or by extracting, or any feeding of the bees with syrup, &c. The comparative strength of the hives observed, best measured by the number of standard frames covered by the bees in each case *before* and *after* the massacre. Also the proportion of adult to immature bees, and the amount of comb occupied by brood in each hive. I am quite aware that a queenless hive will retain the drones, but I have reason to believe that it will be found that the conditions I have mentioned will affect the time of the drone massacre very materially, and I shall be obliged to any one who will help me to test it.—STUDENT.

A COUNTRYMAN'S VIEW OF SHOWS IN GENERAL AND THE COLONIAL IN PARTICULAR.

[541.] Like most bee-keepers who are troubled with 'bee on the brain,' I take a pleasure in visiting exhibitions even in the country, hoping to learn something. I am frequently impressed with the importance of certain gentlemen, who book in hand move briskly about assuming an air of superiority and dignity, making a poor countryman feel he knows nothing. I remember visiting a provincial show about three years since, where a gentleman in clerical garb occupied the honourable position of assistant judge. Being impressed with his appearance I naturally made some inquiries expecting to hear he was a bee-keeper of considerable experience; judge of my surprise when informed that 'he was the owner of two stocks and commenced to keep bees about two years since.' Mark the result, the first-prize hive was most defective in the arrangements of the brood chamber, such a fault as I have never seen repeated by any manufacturer since, and the best hive in the tent was passed over because the legs were not screwed on.

In writing upon the judging of hives I beg to say *I have never exhibited a hive for competition*, and I have an impression that the number of exhibitors of appliances will be reduced every year, because no honest person will stand any chance of winning a prize. Any manufacturer must know that a large number of the hives, &c. exhibited at the Colonial cannot be made and sold at the price specified in the catalogue. One of the successful exhibitors remarked to me that 'he was disgusted with showing, for it was impossible to win if you were honest.' I know the judges will tell you they are obliged to award prizes to the best hives for the money, but when I saw a certificate awarded to a hive with the price on the front amounting to 30s., in a class where the limit was 20s., I felt that must be an error of judgment, and an injustice to honest exhibitors.

In reference to the crates of sections, I had thought the judges desired a crate with as small a surface for the bees to propolise as possible, but it was not so at Kensington, as some that were noticed will require screw-drivers and a strong arm to move them. In another case an honour was conferred upon crates that gave $\frac{5}{8}$ bee space between the crates when tiered, another crate that was noticed I could not move the sections they were so tight; how an amateur would move them when propolised, I don't know. One gentleman acknowledged that his exhibit that received an honour was not equal

to an exhibit in the same class unnoticed. Why certificates were awarded in some instances was an enigma to many practical bee-keepers, seeing that useful articles of merit were passed over. More particularly does this apply to the class of Useful Inventions. I presume the reply will be, many of the articles were not perfect. If so did the judges consider Mr. Hooker's uncapping machine perfect when there were no arrangements for receiving the uncappings and the honey as it would run from the comb? I do not find fault with the award, I think Mr. Hooker deserved all he received; but the machine was not perfect, as I expect it will be in the future. In a class for Useful Inventions an exhibitor stands no chance where his exhibit is new and unknown, seeing he is not allowed to be present and explain the working, his only hope is a friend at court to whom he can show his articles and explain the working of the same. One successful exhibitor I noticed had such a friend to whom he ought to be grateful.—L. WREN, *Lowestoft*.

QUEEN-RAISING. (458.)

[542.] Absence from home must be my apology for having allowed this question to slide for a time.

I think Mr. Wilmot's answer to my first question agrees with the statements in the older bee-books; but the difficulty to me is that the queen's wedding-flight is just the most critical period of the whole business; and that in destroying (or allowing the destruction of) her sisters before her return in safety the bees are 'hallooing before they are out of the wood.'

Mr. Webster's illustration makes the case even worse; is he *certain* that a seventh queen hatching from a cell which was overlooked was not the culprit?

Should the young queen be snapped up by some stray bird, or meet with some other untimely fate, and so fail to return; how is she to be replaced? With a fertile worker, corresponding to the wingless breeding females of the termites?

Modern bee-keepers, however, seem to be inclining to the opinion that the mutual jealousy of queens remains in abeyance till they mate, and causes little or no trouble before. In his remarks on the gland structures of the young queen (*Bees and Bee-keeping*, p. 84) Mr. Cheshire seems to hold this opinion (see also the passage in 'Useful Hints,' p. 211 of present volume.

No. 2. *Method of destroying Surplus Queens.*—I conclude that encasement is only adopted with *strange* queens, and that surplus queens reared in the hive are disposed of by duels *à outrance* or by tearing down the cells. To me this last does not appear to be fair-play, and not too well calculated to ensure the survival of the fittest as the duel.

No. 3. *Expulsion of Queens.*—I presume Mr. Webster means to say that the surplus queens are sometimes expelled, and try to secure another throne; but fail to do so. I did not refer to queens leaving the hive accompanied by a cast or swarm; as such cases hardly come within the scope of my present inquiry.

Those who are engaged in the discussion as to the best methods of queen introduction are inquiring into the condition of the *stock* only which is to be operated on; my third query is directed to the history of the *queen* herself and where she comes from under natural conditions.

If this end of the inquiry were taken up by a larger proportion of observers, perhaps some new facts might be discussed which would prove to be of practical value. —STUDENT.

EFFECTS OF BEE-STINGS.

[543.] I should be glad to know if the effects of bee-stings I have lately experienced are common with other bee-keepers. About this time last year I was stung early in the morning on the chin; in about half an hour I found nearly all my skin turned very red. This redness lasted about half an hour and then went away, having brought no other ill effects than a slight irritation and a touch of headache. Yesterday I was again stung; this time just above the left ankle, and about the same time afterwards when I was busy with other things, and had never thought of my experience last year, I again found that I had turned red, especially on my face and head, but to a less extent over greater part of my body; and again the redness passed away in about half an hour.

A doctor to whom I mentioned this redness last year said it was something akin to erysipelas, but of no consequence. I have frequently been stung before without this consequence; but the two occasions I have mentioned are my last stings.—F. C. H.

QUIETING BEES. (526.)

[544.] I think that 'True Blue' and many of your other correspondents cannot manage their smokers properly. When I first began bee-keeping I found that brown paper burned away in a few minutes, and I took to scraps of fustian, but now I always use brown paper, and I do not think it could be improved upon. If properly managed it never goes out; it burns easily for more than an hour—it gives a dense cloud of smoke when required—and it can be replenished with more brown paper without relighting it.

The brown paper should be cut or torn in strips of the width of five inches, more or less, according to the length of the smoker, and it should be rolled up into a solid roll until it quite fills the smoker. It should not be rolled too tight or it will go out. The best way is to roll it the reverse way every now and then so as to leave a fold, or to crumple it up now and then with the hand. Occasionally I have met with brown paper which would not burn, and I think it was always glazed brown paper, which I consequently do not now use.

Last spring I had been busy a long time with one hive and left the smoker thinking it was burnt out. I went into lunch, and after an absence of considerably more than an hour, I found to my surprise that the smoker was still alight. My smoker is a Bingham with a large opening at the nozzle. I have tried other smokers with a smaller opening and they did not do so well. A dense cloud of smoke will disperse bees when flying, and this I think is the strong point of a smoker as compared with a carbolic acid fumigator. The latter, so far as I have observed, has little or no effect on bees when on the wing, and leaves you at their mercy.—F. L., *Brondesbury*.

MORE LIGHT. (527.)

[545.] I quite agree with 'Sedens in Antro,' that an adept is not the best teacher of beginners. They are best taught by one who has recently travelled the same road and who remembers all the rough parts of the road and the doubts and fears that vanished as he advanced. I also have been obliged to attend to my bees in the evening or early morning, and have found it did very well, although I have yearned for the middle of the fine day that seems to mock me in the pages of the *Journal*.

I should advise 'Sedens in Antro' to peruse Root's *A B C of Bee-culture*, where he will find all sorts of useful hints for beginners, and also *Modern Bee-keeping*, or Cowan's *Guide-book*. If a beginner works from books he should always have two and he will avoid many a blunder.

As to finding a queen, the thing is to take out the frames without disturbing the bees, and this cannot be done if the quilt is glued on with propolis and the frames glued into the hive. Therefore, some hours before, put on a clean quilt, loosen the frames, and put them a little further apart than usual, so as to be able to take any one out without moving the others. Then

when you look for the queen, take out one of the centre frames and, after looking it carefully over, put it down (on end) outside the hive, and look through the rest. Remember when removing the quilt to peel it off gently, and as you do so breathe a little smoke over the tops of the frames. If the bees rush out and show fight you had better put off the job to another day.

I should say it is of no use putting on a super unless there are at least eight frames crowded with bees, and the best test of this is when (on taking off the quilt) you find the bees all packed close together with their heads uppermost in rows between the tops of the frames. In case of doubt put a section-frame at the back of the hive, and when the bees are hard at work in it put on the super and put into it the untinished sections (bees and all) from the frame. Having regard to the size of a standard frame, the comb in it is about 13 in. by 7½, or rather more than half a superficial foot. I believe 2 feet and not 3 is considered sufficient.

The honey glut is on when the bees are seen hurrying home in crowds full of honey (so that an ordinary entrance does not give enough room) and when the white clover is out, or the limes. Roughly speaking, the apple blossom is out in the middle of May; white clover middle of June; and limes middle of July; but this of course is affected by the locality and the weather.—F. L. *Brondesbury.*

REASON OR INSTINCT? [529.]

[546.] Mr. Grimshaw in last week's issue gives a couple of instances of occasional departures on the part of bees from their usual custom. I have one to give, identical with his second instance. An empty frame-hive stood within a foot of a lot in a straw skep. This skep threw a swarm, which, however, almost immediately returned, having, I presume, lost their queen. For some days subsequently the bees hung outside the skep in a state of inactivity, although the short honey-glut had just set in. Knowing, I suppose, that a young queen would not be forthcoming for a few days yet, and knowing also that they were losing the very best part of the season, it seems to have occurred to them that they might very advantageously take possession of the frame-hive close by. This they did, and stored some honey in it prior to swarming a few days later. The curious part of the thing was that they deserted their newly-appropriated storehouse every evening, although during the day they guarded it with extraordinary watchfulness. Instances of this kind show, I think, reason of no mean order.—WELSH NOVICE.

WINTERING A HIVE OF TWO BOXES.

[547.] I have a hive of two boxes, one on the top of the other, each box having nine frames (12" × 5½"). Now what I want to know is, when I am putting the hive into winter quarters, suppose I should have as many bees as will cover twelve frames, would my plan be to put the nine frames in the bottom box and the other three frames in the box on top; would it do either to put them on the one side or the centre of bottom box; or would it be better to put six frames in each box, putting the one on the top of the other, and putting a dummy right down the one side of the two boxes? I think a good plan would be, when any of your numerous correspondents in writing to you in the *Journal* about saying how many frames they have in a hive if they would give the sizes of frames, just in brackets the way I have done, say 12 × 5½, and so on.—J. THORNTON, *Strathaven.*

[Put in six frames in each box and place one box on the other. Keep the frames in the centre of the boxes, and division boards on both sides of the frames, and fill the interstices on the sides with chaff or sawdust. The upper frames should contain the greater portion of sealed honey for winter's store, and winter passages must be cut in *all* combs. If you can arrange it so there should be no space between the top and bottom frames, or, at least, not so much as a bee-space—say half bee-space. If the hives are placed thus, *at once*, it will be better for the bees, and we have no doubt the colony will winter well. Do not leave much honey in the lower box, and see that the combs are not pollen-clogged. Standard-frames are so generally used that we do not recommend any other size. Unless used for a storifying hive a depth of 5½ inches is far too shallow. —ED.]

Foreign.

CANADA.

In the *Canadian Bee Journal* of August 11 are given the names and addresses of the Canadian bee-keepers who have agreed to send either comb or extracted honey to the Colonial Exhibition. They are thirty-five in number, and amongst them we recognise the names of several advanced Canadian bee-keepers. All the honey was to be in Toronto by the 14th, where it will be finally inspected and re-shipped in bulk to its destination.

FRANCE.

The *Apiculteur* of Paris informs its readers that, having failed to secure a suitable building for the purpose, the Central Society of Apiculture has decided to postpone until next year the exhibition which it was intended to hold in Paris this autumn.

ITALY.

It has been decided to hold a Bee-show on a large scale at Varese, to remain open from the 4th of September to the 10th of October next. The spot as well as the date have been chosen with the special purpose of securing, to a certain extent, the success of the undertaking by attracting thereto a good portion of the numerous town people who visit Varese and the lakes in its district at the fall of the year, Varese being considered one of the most suitable localities for relaxation from business and holiday-making. According to the *Apicoltore* of Milan, the Central Bee Association will not, as is generally the case, assume the direct patronage of this show, owing, it alleges, to the frequency of such exhibitions, but will nevertheless contribute several prizes to it on condition that it be allowed to appoint one member of the jury. Varese is of easy access from several parts of Upper Italy. There are, for instance, two convenient railway lines from Milan, and a very agreeable tour can be made from there by visiting, besides the main attraction for a bee-keeper, the lakes of Lugano, Como, Maggiore, not forgetting a call at Pallanza, Intra, the Borromeo Islands, &c.

The list of prizes already fixed for competitions consist of a Grand Diploma of Honour, four ditto of merit, three gilt silver medals, five silver and six bronze ditto.—*Apicoltore.*

BEES IN A CHURCH.—The Christian Church at Harmoney, near Oakland (Illinois), has been habited by bees for a number of years. The bees took up their abode in the wall behind the pulpit. The pastor of the church has been annoyed by them, and they finally got so bad that they drove the pastor, people, and all out of the church and had undisputed possession. The other day a crowd collected and ripped the siding off from the foundation to the roof, where they thought the bees were located. After getting the siding off the men found that the bees had deposited their honey in the wall between the studdings, that space being completely filled with honey to the height of sixteen feet. The honey was carried away in wash-tubs and pails, and divided among the people living near.

GLEANINGS.

In the *American Bee Journal*, Dr. A. B. Mason gives the following recipes for making honey cakes which have taken prizes at the Tristate Fair:—To 3 eggs well beaten add 1½ cupfuls of extracted honey, 1 cupful of sour cream or rich butter-milk, ½ teaspoonful of soda, and 3 cupfuls of flour, to which has been added one large teaspoonful of baking powder. Bake it in jelly pans, and put it together with the following lemon paste:—In the juice of one lemon dissolve 1 tablespoonful of corn starch, pour on ½ cupful of boiling water, ½ cupful of honey, and 1 tablespoonful of sugar. Another: 1½ cupfuls of extracted honey, ⅔ cupful of butter, ½ cupful of sweet milk, 3 eggs well beaten, 3 cupfuls of flour, 2 teaspoonfuls of baking powder, 2 cupfuls of raisins, and 1 teaspoonful each of cinnamon and cloves.

In the *Prairie Farmer*, H. Garman, of the Illinois State Laboratory of Natural History, who has studied the food of toads in various parts of Illinois, writing of their fondness for insects, says:—'Of these nothing comes amiss, stink bugs, tomato bugs, and even stinging Hymenoptera (bees and wasps) may be taken from their stomachs. Predaceous beetles (Carabidæ) form a conspicuous element of the food of adult toads. In the food of young toads ants take the place of beetles, to some extent, at least. The variety of species eaten at one time is astonishing. Sixteen genera, representing two classes of arthopods, and five of the seven orders of one of them, have been determined from the contents of one stomach.

In the *Bee-keeper's Guide*, Professor Cook states that cane sugar which composes from one to eight per cent of honey when eaten by any animal, man included, is changed to a sugar much like, if not identical with honey. The bees do the same with nearly all the cane sugar of nectar, and nearly all the cane sugar when they feed upon it. Hence it is that honey is one of the most healthy and nutritious of all our sugars, that the bees have done for us what we would have to do for ourselves had we eaten the cane sugar.

In the *Bulletin d'Apiculture de la Suisse Romande*, M. Kramer says that with regard to the size of the frame and the shape bee-keepers will never be agreed. For every opinion, a theory can be found. Experience shows that if supers are used a shallower frame can be used than when no supers are employed. He uses two dimensions of frames both deep and shallow, and last year he was not able to observe that there was any difference either in the development of the colonies or in their honey production.

In the *American Bee Journal* Dr. G. L. Tinker says he has recently been taking measurements of a large number of drones' wings, and finds more variation than he had supposed. The Italians measure uniformly half an inch in length and $\frac{5}{32}$ of an inch in breadth at the large wings. Pure Carniolans are from $\frac{1}{16}$ to $\frac{1}{32}$ shorter, and the same width. Some of his best Syrio-Albino drones have wings nearly $\frac{5}{16}$, or almost $\frac{1}{16}$ of an inch longer than those of any others he has found. The breadth is also slightly more than $\frac{3}{32}$ of an inch. He thinks such drones are the ones to get mated with the queens. If we select the most active and swift-winged it will surely add one good point to the stock in breeding up a superior strain of bees.

In *Gleanings* we find A. I. Root, speaking of reversible bee-hives and reversible frames, says, Since the description of Heddon's hive and arrangement so many letters have come in describing various arrangements for reversing hives as well as frames that it is beyond his strength to go through descriptions, and he gives an opinion upon them. The greater part of them are nothing particularly new. Years ago Dr. Conklin, of Delaware, Ohio, sent him a hive to try which had square frames set in the hive, and one corner of the frame was down. These frames could be used with any of the four corners down, but all the time he used it, it never occurred to him to take advantage of the ease with which these frames could be reversed. At the Ohio State Fair last fall, Mr. A. C. Benedict, of Bennington, O., had the hives on exhibition with such frames. He has used them between twenty and thirty years, and has never practised reversing them, and says he does not want them reversed. Is it not a little singular how progress, and improvements, and fashions revolve round, and once in about so long a time they come back to about the same thing again? Even shallow sections, and hives used one above the other, have been in use for years, and have repeatedly been patented. Our old English works give pictures of them now, and before the advent of moveable frames it was customary to have shallow hives with just the same depth of comb that Heddon uses, and these were worked two tiers, three tiers, and even four tiers high. Some of them use slats to induce the bees to build their combs regular, so that the owner might hold these shallow sections up to the light and look through them.

In the *Bee-keeper's Magazine* A. J. King says, 'Never smoke the hive you intend opening at the *entrance*, for this drives in the queens, makes the bees peaceable, and so lets in *robbers*. On opening the hive use only enough smoke to drive the bees down out of the way. On raising out a comb shake it *perpendicularly*, lest the thin honey be thrown out and *over the hive*, lest you lose young bees which have never flown out and so do not know their own hive, and also lest possibly the queen may be lost. So far as practicable always replace the combs removed with the empty ones *at once*, and so avoid having to open the hive the second time.

In the *Allgemeines, deutsches, illustriertes Bienen Organ* M. Felgentren says, according as the work of the worker bees is different, they are called nurses, workers, or carriers. The nurses can also be called feeders, for it is they that prepare all the food for the brood. The food they eat produces blood; the blood supplies the salivary glands in the mouth which produce the food, having no resemblance to the honey or pollen, but is a white pap. This food is the milk of the young insects. However, when the larva becomes older it receives in addition honey and pollen until it is sealed over. The sealing takes place when the larva is full grown. (The weaning here mentioned was discovered by Leuckart in 1855, and described in the *Bienenzeitung* of that year, page 209.—Ed.)

In the same journal we read that in Prussia in 1883 there were 1¼ million hives of bees, which gave a return of fifteen million marks.

In the *American Bee Journal* G. M. Doolittle describes his method of inducing bees to swarm naturally and early, as he prefers natural to artificial swarming. In the latter part of April he selects colonies having such queens as he wishes to breed from, and advances them by every known means as fast as possible. He formerly depended upon giving these colonies frames of hatching brood, but for the past two seasons he has adopted the plan of giving caged bees, with better results. He takes a cage, and from each of a number of colonies gets a pint or so of bees, until he has as many as he wants, then the cage is placed in a cellar until nearly dark, when it is brought out and placed over a selected colony in such a way that the bees can run down with the colony during the night through a hole in the quilt. In this way a colony is materially strengthened without the danger of chilling the brood, and he is able to get it to swarm two or more weeks in advance of the rest.

In the *Canadian Bee Journal* we find the following:—Some of our friends have been often disappointed, when putting on their sections to find that the bees had not occupied them as soon as they thought they should and some difficulty has been experienced in getting the bees into the sections, and even when they did start it was

after the honey season was so far advanced that much of the honey crop was lost. It would seem that there are many who doubt that bees can be induced to go into the sections above when the combs are spread in the brood-chamber. The ordinary way of placing frames is about one and a half inches from centre to centre or eight frames in twelve inches. Now, when bees refuse to enter the boxes, at the very first appearance of the honey flow, you can, by adding one or two more combs to the hive and crowding up the bees in the same space, get them to commence occupying the sections at once. One and three eighth inches from centre to centre (if straight and true, one and a quarter will do) will give the result which you are so anxious to obtain.

In *St. Nicholas* we find an article on 'Bee Hunting in Australia.' There the native adopts a very peculiar plan for discovering wild honey. He knows that bees never wander very far from home, seldom more than two miles, and he knows that when a bee is laden with honey, it makes as nearly as possible in a straight line for home. All that is necessary is to find a bee well laden and follow it. More easily said than done. In order to be followed the bee must have a distinguishing mark that can be easily seen, and such a badge the Australian provides it. He gums a tuft of cotton to the bee's back and then follows it with comparative ease. But the question now comes up, how is the cotton to be put on the bee's back? Watch the Australian—and he is a very stupid fellow, too, in most things. He fills his mouth with water, has his snowy tuft of cotton ready gummed, finds his bee buried in a flower, drenches it with water spurted from his mouth, picks it up while it is indignantly shaking itself free from the water which clogs its wings, and with a dexterous touch, he affixes in an instant the tell-tale cotton. Very much out of patience, no doubt with the sudden and unexpected rain-storm, the bee rubs off the tiny drops from its wings, tries them, rubs again, and soon—buzz! buzz! away it goes, unconsciously leading destruction and pillage to its happy home.

A Railway Station seized by Bees.—Llandilo railway station, Wales, was on Tuesday the scene of unwonted excitement. One of the employés has a bee-hive near the station, and while extracting the honey from it he disturbed the bees, which immediate made a furious attack upon the passengers on the platform. One young lady dropped her luggage, and took to flight. In endeavouring to rescue another lady, about whose head the bees had clustered, a railway official was badly stung in the eye, while the owner of the insects was left in a dreadful plight by them.

Echoes from the Hives.

Urban Bee-keeping.—I have just removed 18 1-lb. sections from a stock of thirteen frames. Wanting some combs for condemned bees, I examined them and found every one of the thirteen frames contained brood. There are so many bees that there is not room for those which were in the sections and they are clustered outside. The queen is a black of 1885. The stock has not been fed at all since last autumn, when it was made up from condemned bees. This within one mile of the Houses of Parliament!—L. F.

[Perhaps these 'urban bees' have not been contented with visiting the flowers in adjacent gardens. They may have strayed into the premises of the makers of cordials and sweetmeats in that neighbourhood. Is not the manufactory of Mr. Jousiffe ominously near your apiary? See scene in Lambeth Police Office, p. 399.—Ed.]

Beltoy, Ballycarry, Co. Antrim.—I am only a novice, this being my first year. I began by purchasing a first swarm, which came off on 2nd July; it was pretty large and I put it in a bar-frame hive, having ten standard frames and half-sheets of comb-foundation. I made an examination of the hive yesterday and found that they have the frames nearly filled, although the weather here has been anything but favourable. I have also a stock in a straw skep, it is a second swarm which came off about the 12th July, and was rather small; they are working pretty well, but I am afraid they will not be strong enough nor have sufficient stores to pass the winter.—W. J. B.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

Wm. Walters.—There are no symptoms of foul brood in the pieces of comb forwarded. We hope, with you, that you may be very successful in your apiary next year.

W. G. P.—It is not desirable that gratuitous trouble should be given to any one. We have always found the gentleman to whom you refer most dependible. We impute the continuous appearance of the advertisement in question to forgetfulness on his part.

J. P.—*Heather: Honey yield per Acre.*—We have no accurate data as to the quantity of honey one acre of heather will secrete per day, but would say from 50lbs. to 70lbs. in a very good season.

Miss. M.—The flower enclosed is not *Stachys lanata*: it is *Collinsia bicolor*, an annual native of California. This species and its white variety (*C. bicolor alba*) are much frequented by bees, and are also highly decorative flowers for the flower-garden.

G. Toon.—*Dead Queen.*—When examining No. 2 hive and removing combs to look for brood and eggs you dropped the queen, or she might have flown on to the ground; she then, endeavouring to enter No. 1 hive, was, as a matter of course, thrown out, and so badly assaulted as to cause her death. At this time of year the bees will often 'ball' their own queen if disturbed too much. Either unite or purchase another queen.—W. B. W.

A. H. Haines.—*Taking Honey from Skeps.*—Purchase the *British Bee-keeper's Guide Book* by Cowan, 1s. 8d. post free from Mr. Huckle, Kings Langley, Herts. You can drive the stocks that you wish to take the honey from, and then unite these driven bees to your weakest colonies, taking care to save the young mother bees and destroying the old ones.

D. H. D.—*Too late for Artificial Swarms.*—It is now much too late to take artificial swarms. How would your young queens get fertilised? all drones have been turned out, with the exception of those stocks which are motherless. 2. The bee forwarded was a common black bee.

R. P.—*Quieting Bees.*—Sprinkle some syrup between the combs, this will answer the same purpose as the honey. Do not brush the bees off the combs, but by a downward jerk of the frame precipitate them into the hive; then brush off the few remaining ones.

East Dulwich.—*Unfinished Sections.*—Your sections not having been filled this year is nothing unusual, as it is some few years since we have had so bad a season in your part of the country. Your stock is in a very satisfactory condition, and with such a quantity of young bees will no doubt winter well. Give them about a dozen pounds of syrup, and then wrap them up nice and warm and *dry*. Finish feeding by end of September.

A. Robinson.—*Digestibility of Wax.*—Wax is seldom prescribed in medicine, though it has been used in cases of dysentery. Its action is chiefly mechanical, and as some people cannot digest it, in those cases it is of course more indigestible than run honey, but as a rule the quantity taken is so small that no ill effects follow. The wax in the sections should be rejected in the same manner as the skin of the grape.

Novice.—1. *Number of Frames for Winter.*—Four frames, if well filled. 2. *Wintering on Syrup.*—Bees winter well on syrup alone, if good and sealed over, and the same weight as of honey will suffice. 3. *Feeding weak Colonies.*—A

weak colony should be fed at once, so as to enable them to store and seal the syrup. 4. *Too much Syrup.*—Too much syrup given to a strong colony on few combs would cause the queen to be shut out from breeding by the cells being all filled with syrup. 5. *Acetate of Ammonia.*—We should think acetate of ammonia might injure the bees. If borax be rubbed together with salicylic acid—in the proportions advised by Mr. Cowan and dissolved in *warm* water it mixes perfectly.

A Novice in Bee-keeping.—*Salicylic acid.*—Feeding with salicylic acid solution is a preventitive measure against possible infection of foul brood, very much in the same way as lime-juice is given to ward off scurvy. The acid is a powerful antiseptic, and as far as is known at present has no bad effects in small doses.

J. D. R.—*Suburban Bee-keeping.*—The are several bee-keepers in St. John's Wood, who have been very successful. A bee-keeper in Brondesbury has been able during the past season (which cannot be said to have been a good one) to secure from two hives one hundred pounds of honey. Some of the finest honey exhibited by the Middlesex B. K. A. at the Colinderies came from that district. Success in bee-keeping in your part will much depend on the system adopted, and the manner that system is worked out. Of course the hopes of suburban bee-keepers are on the wane. As builders advance, bees must recede; and your part is gradually being covered with dwellings.

J. Rushworth.—For dry sugar feeding you will find Porto Rice or some of the grades of Demerara sugar most useful; for making syrup, crystallised pearl sugar.

J. C. I.—1. *Chloroform.*—This is, to some degree, injurious to bees at any time, and so are all anæsthetics. 2. *Condemned Bees.*—They will keep for forty-eight hours, or longer, before hiving, but after forty-eight hours they should be fed, or they may, having exhausted the honey with which they were gorged, be rather pugnacious. Keep them in a cool shed. See article on the subject p. 393. 3. *Dry Sugar.*—¾ lb. sugar is equal to a pint of syrup.

J. S. W.—*Preparing for Winter.*—Reduce now and feed gently at first, but more rapidly the last week in September, when all feeding should cease.

Query.—*Draining Unfinished Sections.*—Will any reader kindly state how I can *drain* the honey from some unfinished sections without melting or damaging the combs, which I want to save intact? I have tried every position without effect.—Learner.

Show Announcements.

Giving Name and Address of Secretary, Date and Place of Show, Date of Closing Entries. Terms: Three Insertions and under, Two Shillings and Sixpence; additional insertions, Sixpence each. No charge made to those Associations whose Shows are announced in our general Advertising Columns.

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Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
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THE BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

[No. 219. VOL. XIV.] SEPTEMBER 2, 1886. [PUBLISHED WEEKLY.]

Editorial, Notices, &c.

GLAZING SECTIONS.

The simplest method of glazing sections for sale or exhibition is by enclosing them in the fancy boxes advertised by the British Honey Company and several of the appliance dealers. This adds to their cost from 2*s.* to 2*s.* 6*d.* per dozen, which is not a small item, but will doubtless commend itself to many whose time is limited or who lack the ability of putting them up 'tastily.' There is one very great drawback which we ought to point out; it is this:—the fancy boxes with sections enclosed will not travel in the ordinary travelling-crates, the fancy boxes being too large to fit into the crates.

The next method is to procure some squares of good white glass $4 \times 4\frac{1}{4}$ (we are dealing now with 1-lb. sections $4\frac{1}{4} \times 4\frac{1}{4}$), which will cost about 4*d.* per dozen, and get a piece of very thin tin plate, and with a pair of scissors cut for yourself small clips of tin, of which Fig. 1 is full size. These can be driven into the wood sides of the sections, and bent over the glass to keep it into position; about eight clips to each section will be about the number required.

Fig. 1.

Before you can fix the squares of glass into your sections you must cut away the pieces marked *a* in Fig. 2.

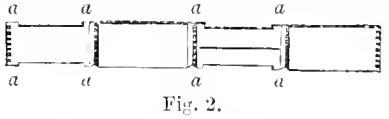

Fig. 2.

You will understand the section is here shown open, to make it more plain. You will then find your squares of glass will fit into the faces of the sections '*flush*,' and when fastened there by your tin clips, if your sections are well finished, they will look well in their unadorned simplicity. This method is the one invariably adopted by a successful lady exhibitor.

An advance upon this is to get strips of *white* paper—glazed looks best—cut like Fig. 3, and paste them over

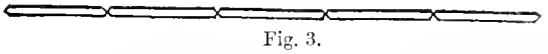

Fig. 3.

the edges of the glass and wood to keep the glass in position, instead of using tin clips. This gives the sections a 'cigar-box' appearance, and it is important not to have the paper wider than here given, and to use only *white* if you are exhibiting, as this is the law laid down by the B.B.K.A.'s Exhibition Rules. Each section will require two such strips.

So far we have given only what may be lawfully used at an exhibition. Why the fancy-edged boxes of every conceivable colour may be used, but, on the contrary, only *white* strips pasted over the edges, we are at a loss to conceive; but so it is, and it is for exhibitors to conform or risk being disqualified.

But this season is remarkable for its badly filled sections. Bee-keepers who pride themselves on having sections without 'pop-holes' are compelled to exhibit them with what may be called 'pop-gaps.' This naturally affects the appearance on the purveyor's stand, and several have inquired of us how they may hide these defects for sale purposes. We procure some 'lace-paper,' such as is used to line fancy boxes with glass lids that you may see in fancy milliners' shops. This can be used instead of Fig. 3: it can be procured almost any width, and one half of its width is stamped into various patterns more or less elegant, while the other half is plain. Fig. 4 gives a rough sketch how these

Fig. 4.

should be cut. This has the appearance of Fig. 3, with the fancy edging added to hide the imperfections in the edges of the honey-comb. Section-boxes so covered are not suitable for the rough wear and tear of carriage and the purveyor's counter, unless they have a very ready sale; the dust soon lodges in the fancy edges of the lace paper.

We will give one more method. It is the one we have used ourselves for some years, which we do not wish you to adopt if you live in our neighbourhood, as we desire to retain the monopoly. We make no apology for candour, but freely give you a description nevertheless. We use the lace paper already described, but cut it into eight pieces for each section, each 4 inches long. The shape is given at Fig. 5. The plain part is entirely cut away, as shown in the sketch, and these are pasted *inside* the glass, instead of outside as in Fig. 4. Care must be taken only to touch the outer edges of the lace paper with paste or gum, as when touched the paper will show yellow through the glass, but the outer edges are covered with the outer wrapper, as we shall presently see.

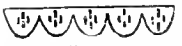

Fig. 5.

We next procure sheets of coloured glazed paper. It is only coloured and glazed on one side, and the fancy boxes

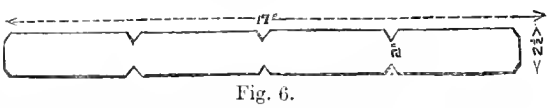

Fig. 6.

are simply cardboard covered with this kind of paper. We cut ours as at Fig. 6, and having fastened the lace

paper *inside* the squares of glass, and cut out the notches marked *a* in Fig. 2, we stick these strips, Fig. 6, over the outside of the sections, folding the edges over which shows a margin all round of ¼ of an inch, and gives the whole an appearance 'fit to place into the hands of a captivated purchaser,' as we were told last season. If you have a quantity to put up, these papers may be bought already cut and gummed ready for use. We cannot name dealers for obvious reasons, any of them will procure what is inquired for.

If you still wish to further embellish your sections you can get them stamped with a device and motto, that you can register as your trade-mark: only remember not to choose '*Mel sapit omnia*,' unless you wish to incur pains and penalties at the hands of—AMATEUR EXPERT.

THE CONFERENCE.

FIFTH PAPER.

THE HONEY MARKET.

BY DUNCAN STEWART, ESQ.

The question of a market for British honey having for some time occupied the attention of the Committee of the British Bee-keepers' Association, and its solution having been now, to a great extent, arrived at, I have prepared some few remarks on the subject for this Conference.

In past times, *i.e.* referring to the period antecedent to the formation of this Association, there were many causes to account for the very limited consumption of honey in England. Its production had gradually fallen into the hands of careless and thriftless people who had very little scientific knowledge of bees, only an ignorant and haphazard way of collecting their produce, and a very limited outlet for its sale; consequently they were without any special inducement to increase the quantity or improve the quality of the supply. Run or pressed honey was used to a very small extent by apothecaries and chemists in preparing their medicaments, it was kept in country houses for occasional use in sickness, and was also met with in a few families as an occasional extra on the breakfast table, but as a frequent or regular article of food it may be said to have fallen altogether out of notice. Comb-honey was also met with in the autumn in some localities, but it was treated only as a casual luxury, and purchased rather as a bounty to the poor cottager who offered it for sale than from any great relish for the thing itself. It was, moreover, under the then known method of production, so often contaminated and disfigured by brood and pollen that very few persons cared to do more than gratify a vague curiosity in tasting it. Its sale even then brought a profit, small and uncertain but welcome, to the poor people who 'took up the bees,' sufficient to keep the industry alive.

When upon this condition of things there came the enormous fall in the price of sugar, cheapening the cost of producing jams and other confections for the table, and when large fruit farms were established to supply material for jam-making, the last blow seemed to have been given to the honey industry in England; but just at this time a compensation was found in the introduction of the newer methods of bee-keeping, whereby not only was the honey production immensely increased, but its marketable quality was so changed as to bring it into competition with the best products of the manufacturers of preserves. The variety of these delicacies also created a demand for newer and additional supplies, and the cottagers' bees were soon found of greater and greater importance to their owners. When, again, the fruit farmers were taught that the bees were a benefit, not an injury to their harvest—were indeed essential to it—they began to combine the production of honey with that of fruit, and apiaries increased throughout the land. The increase of apiaries stimulated the hive-makers to produce newer and better appliances, which reacted upon the bee owners, and the industry grew apace.

Most of these beneficial changes were brought about by the direct influence of the British Bee-keepers' Association, and, in more recent times, by its affiliated County Associations. The local and general shows which were held under its auspices, the prizes it offered for improvements in hives and implements and for the best exhibits of honey, stimulated the bee-keepers to greater exertions, and the results were rapid and most gratifying.

The prices readily obtained at these shows for *prize honey* caused large quantities of high-class honey to be sent to such places for sale, and, on the whole, with satisfactory results. Honey fairs were organized and large sales effected through their agency, but there still remained considerable quantities unsold; and the poor cottagers, who without capital could not incur the risk and expense of sending to the show, were too often compelled to sell at very low prices. They were handicapped, too, by the foreign importer, who at first introducing genuine and fairly good material obtained a share of the opening trade, but soon took advantage of his position to palm off syrups and starch in lieu of the genuine honey, and, offering it at a low price, discouraged the honest dealers from embarking in the legitimate trade.

Capitalists and traders can generally protect themselves, but the cottagers, in whose interest mainly it is our pride to remember that the Association was established, required something more than being taught how to produce.

The small producer, left to find his own market by hawking about his honey from house to house, soon finds '*le jeu ne vaut pas la chandelle*.' To escape from this position he falls easily into the hands of travellers and middlemen, and his hoped-for profit rapidly dwindles to a vanishing point. He has no means of knowing the real value of his goods, and is driven to take just anything that is offered; even then he may be kept waiting in doubt and risk before the tardy payment reaches him.

To meet this difficulty was the subject of much anxious inquiry and deliberation on the part of our Committee, and overtures were made to many leading tradesmen in London to become agents for the Association in this behalf, but no satisfactory arrangement could be arrived at. At this juncture the bee-keepers' constant friend, the late Rev. H. R. Peel, came boldly forward and proposed the formation of a commercial company to take up this work. The project was approved, and, though the Association could not directly adopt it, individual members of the committee and others gave it their support and the British Honey Company was established. Other companies were also started about the same time to provide similar facilities for selling honey.

It is not my province here to dwell on these companies and their operations, but merely to show how the necessity for their existence came to be recognised and the fact that they do exist to supply a want. It is the business of the Companies to reach the public, and to develope the consumption of honey by a just regulation of price to the supply and demand. Let us consider how the producer (in whom our Associations are interested) is affected by the development of the honey industry, and what he must do to get the benefit of it. He must consider in what direction his readiest market lies, and how he can use it to his own greatest convenience and profit.

First he must have regard to the *quality* of his produce. He must be jealous for the character of the British honey market, by taking care that he sends no inferior thing to spoil the growing trade, and must see, too, that his produce passes into honest hands by whom it will not be tampered with. Unless he is a very large producer he will soon find that he may spare himself much cost and anxiety by leaving the work of bottling and labelling to the dealers. The cost and risk of glass bottles is considerable, and when supplied in small quantities is out of all proportion to the profit on the honey. The dealers will supply vessels in which honey may be transmitted with safety, and the producer will act wisely in availing himself of these, and so to employ them as to keep his best honey always in its separate vessel. Extracted honey will always find its outlet in this way, and competition among the dealers will always ensure a fair price for it. With comb honey it will be different. The once much-admired bell glasses are found to be quite unsaleable. The comb cannot be cut out of them without loss and disfigurement. They are difficult to pack and dangerous in carriage. Frames of comb, however perfect, are in like manner unmarketable, and all such had better be passed through the extractor and the combs returned to the hives. Sections,

1-lb. or 2-lb., are on the other hand readily sought for provided they are in perfect condition; and *condition* is what the producer must always strive for. Every dealer understands the importance of putting his wares before the public in an attractive form. The more attractive the appearance of the thing offered the more rapid and successful will be the sale, the larger the consumption, the more lasting the demand. This must especially be remembered in putting honey upon the market. We know it is one of the most risky things to pack and carry with safety, and unless it can be sent to market without leakage and without being broken down its market value is very much depreciated. In preparing it for the ordinary retail trade for family consumption, which, after all, would be expected to be the mainstay of the trade, the sections must be absolutely clean and free from all discoloration. There must be no leakage or mess; they must be easily portable and so arranged that they can be transferred to the breakfast-table with the least possible risk of blemish. To meet all these requirements there is nothing yet produced so good as the *glazed boxes*, which protect the comb from all dirt and injury, and from these boxes they are readily removeable at will. Next to these the simple glazing of the section itself is the best thing, and the mode of securing the sheet of glass to the section box is either by a strip of ornamented paper around the box or by metal clips, of which modes the former is to be preferred. To attract new buyers this extra expense is well laid out, but when the merits of the honey are well established and recognised, when the confidence of the public has been gained, it will be readily saleable in whatever form it is presented.

It only remains to caution the unwary producer to deal only with persons of known integrity, or he may, as too many have found out to their cost, be left at the end of his season with only a delusive credit for all his expense and trouble.

Discussion.

The Rev. F. G. Jenyns fully agreed with a great deal in the paper, and he knew what a good work the Honey Companies were doing, but their benefits were confined almost exclusively to those who kept a considerable number of hives. The cottager, who kept only two or three hives, and had no more than about 20 lbs. of honey to dispose of at a time, had a great difficulty in getting rid of his produce. What was wanted was a number of agents scattered throughout the country who could receive small amounts of honey and without any trouble find a market for them. The cottagers with whom he had come in contact were quite ready to accept the market price for their honey, but it did not pay to send small amounts up to London. He thought the efforts of all those interested in the spread of bee-culture should be directed towards securing for small bee-keepers an outlet for their honey-produce, for this difficulty was an obstacle to the spread of the industry.

The Rev. Mr. Gaggin said unfortunately there were very few honey-markets in existence. They were trying to establish one in Ireland, but could not succeed owing to lack of funds. He would like to see this done, and quotations of prices given in the public papers as in the case of other industries. He had recently brought some superior honey to Dublin, but had found great difficulty in selling it, and as for run honey no one would buy it.

Mr. Garratt said the question for them to consider was whether the demand was equal to the supply. A great stimulus had recently been given to bee-keeping. The cottage bee-keeper had been encouraged and promised that if he began bee-keeping a market would be sure to be found for his honey. He thought it was doubtful whether that kind of advice and encouragement should be given so freely. A honey-market could not be kept up on a sentimental basis, and it was of no use making the supply greater than the demand. The cottager had been in the habit of receiving a liberal price for his honey, which had, unfortunately, led him to suppose that that price would be maintained, but that was impossible in the face of foreign competition. They must beware of advancing too rapidly. He could not think that any business organization was capable of dealing with the matter in the way suggested by Mr. Jenyns.

Mr. Candey did not think that County Associations could encourage too much the production of honey. It was the mission of those bodies to advance bee-culture. He quite agreed that some plan should be found of obtaining a sale for the cottagers' honey. He thought the Committee ought to issue and circulate a pamphlet on honey as food, designed to increase the use of it among the general public. The masses were, no doubt, ignorant of its value and uses, and it would be well to enlighten them thereon. A grocer at Portsmouth told him he had bought some honey with comb in the bottles and some without, and that he had been able to get rid of the former easily, while the latter would not sell at all. That showed the necessity of teaching. A sum of 63,000*l.* had been paid for imported honey during the previous year.

Mr. Ross said that probably double that amount of grease had been imported during the same period, and sold as butter. It would be a public benefit if honey could be substituted for that unwholesome import.

Mr. Athawes said undoubtedly there was a great deal of ignorance as to the value of honey as an article of food. He had met with people who seemed to think that it was only of use as a medicine in cases of sore throat. He thought that a circular prepared and distributed broadcast in the way suggested by Mr. Candey would soon increase the demand for honey.

The Chairman said they were all indebted to Mr. Stewart for his able paper. The great difficulty in regard to a honey-market was the uncertainty of a regular supply of honey. Hitherto the produce of that commodity had been very intermittent. One year there was a large supply, and another year the reverse. They could not do much with the dealers until they were certain of a regular supply. In the case of imported honey, almost any quantity could be obtained. It was true that the Honey Companies, by means of travellers and otherwise, were doing their best to keep the foreign produce out of the market, and experience has proved that when dealers have purchased British honey they have renewed their orders in preference to taking foreign, and British honey is quite commonly seen in grocers' windows now. In order to insure the continuance of that result, bee-keepers must be content to lower their prices, and accept the smallest possible profits. With regard to the publication of a pamphlet, that suggestion was carried out at the time of the Health Exhibition, and he believed they had already circulated 100,000 copies. The value of the imported honey last year had been computed at 63,000*l.*, but they must not forget that that was a decrease in the value of the imports of former years. In some countries imported honey had little sale because a good deal of it was impure, and we had also to compete against importation of adulterated honey. Bee-keepers might do a great deal by creating a local market for their honey. They could offer it to grocers on sale or return. Some of the counties had local depôts, which were, no doubt, of great help to the cottagers.

ASSOCIATIONS.

BERKS BEE-KEEPERS' ASSOCIATION.

Annual Show at Reading.

The sixth annual show of this Association was held, by kind permission of the Mayor and Corporation, in the Abbey Ruins, at Reading, on Thursday, August 26th. A great feature of the Berks Association is that it aims at the encouragement of the application of British honey in various ways, and it also encourages collateral industries: and we are informed on the best authority that at

no other provincial show in the kingdom has there been seen such a grand collection of honey in various applied forms as was to be seen at this show.

Among the various exhibits not for competition, and in addition to the confectionery, &c., were large and varied assortments of silver plated and glass receptacles very suitable for honey, sent by Messrs. Bracher & Sydenham, Messrs. Watson Brothers, and Messrs. Durran and Carter; collections of natural and dried plants suitable for bee food, sent by the Rev. V. H. Moyle, Messrs. Abbott, and Messrs. Dobbie, of Norwich. The show took place under the large tent used for the Reading Horticultural Show on the previous day. The arrangement of the exhibits and the show generally were admirable, and reflected great credit upon the committee.

In the absence of Princess Christian (who is President of the Association) Mrs. C. T. Murdoch kindly undertook to perform the ceremony of giving the prizes.

At intervals during the afternoon and evening, there were promenade concerts in the banqueting hall by the famous Hungarian band. At dusk a lantern fête was held, when the ruins and chestnut avenue were illuminated by thousands of coloured lamps, lanterns, &c., by Messrs. Brock & Co., the Crystal Palace pyrotechnists. The tent was lit up with the electric light. The whole had a grand effect. Refreshments were provided by Mr. Smith, of Broad Street. The show, we are glad to learn, proved a financial success, no less than 67*l.* being taken at the gate. The judges were the Hon. and Rev. H. Bligh, the Rev. J. L. Seager, and Mr. Otto Hehner, F.C.S., F.I.C. Their awards were as follows:—

Class I. (Open to all England.) Best observatory hive, with best English bees and queen: 1, T. B. Blow; 2, S. J. Baldwin.—II. Best observatory hive, with best stock of Ligurian or other foreign bees and queen: 1, S. J. Baldwin; 2, Abbott Bros.—III. Best collection of hives and bee appliances: 1, Abbott Bros.; 2, S. J. Baldwin.—IV. Best moveable comb hive (presented by the Mayor of Reading, Arthur Hill, Esq.): 1, T. B. Blow; 2, Neighbour & Sons; 3, S. J. Baldwin.—V. Best bar-frame hive: 1, T. B. Blow; 2, Neighbour & Sons; 3, S. J. Baldwin.—VI. Best and cheapest hive, moveable comb principle, for cottagers' use: 1, Neighbour & Sons; 2, T. B. Blow; 3, Charles Redshaw; H.C., E. C. Walton.—VII. Straw skep and section rack: 1, T. B. Blow; 2, H. Fewtrell.—VIII. Best rack, containing 1-lb. sections, prepared for placing on a frame hive: 1, Neighbour & Sons; 2, Abbott Bros.—IX. Best crate for the safe conveyance of honey in sections or jars by rail (or otherwise): 1, Abbott Bros.; 2, H. Jeanes.—X. Best honey extractor: 1, T. B. Blow; 2, Abbott Bros.—XI. Best sample of thick comb foundation, not less than 2½ lbs. for worker cells: 1, T. B. Blow; 2, Abbott Bros.—XII. Best sample of thin comb foundation, not less than 2½ lbs. for supers: 1, Abbott Bros.; 2, W. G. Preece, junr.—XIII. Best feeder: 1, Charles Redshaw; 2, H. Fewtrell.—XIV. Any recent invention calculated to be of use to the bee-keeping industry. Bronze medals to Abbott Bros., S. J. Baldwin, T. B. Blow, The Self-opening Tin Box Company, F. Lyon, and A. Goodman.—XV. Best general collection of honey and wax in various applied forms: 1, Rev. V. H. Moyle; 2, Samuel Fry.—XVI. Best collection of honey applied as food and confectionery: 1, George Darvill; 2, J. D. George; 3, J. Stowe.—XVII. Best collection of honey applied as beverages: 1, Samuel Fry; 2, W. Beckett; 3, Frank Blatch.—XVIII. Best collection of honey applied as medicine and pharmaceutical preparations: 1, Tunbridge & Wright; 2, B. H. Butler.—XIX. Best collection of bee flora: 1, Abbott Bros.; 2, Henry Dobbie; 3, Rev. V. H. Moyle.—XX. Best display of receptacles for table honey, made of plate or of plate and glass combined: 1, Durran & Carter; 2, Bracher & Sydenham.—XXI. Best display of receptacles for table honey, made of glass and china alone or in combination: Bronze medal, Watson Bros.

Local Classes.—XXII. (Members of the Berks Bee-keepers' Association.) Largest and best display of honey, over 100 lbs.: 1, M. Whittle (134 lbs.); 2, Woodley Bros. (250 lbs.); 3. W. Woodley (360 lbs.); H.C., J. W. W. Champion (211 lbs.).—XXIII. Best display of honey, comb and extracted, under 100 lbs.: 1, Henry Cobb.—XXIV. Best 21 1-lb. sections of comb honey: Silver medal, Rev. R. Errington; bronze medal, W. Woodley; certificate, Woodley Bros.—XXV. Best super of honey, not being sectional: 1, M. Whittle; 2, Woodley Bros.; 3, W. Woodley.—XXVI. Best 21 1-lb. sections of comb honey: 1, John Rayer, junr.; 2, W. Woodley; 3, Woodley Bros.—XXVII. For the best 12 2-lb. sections of comb honey: 1, Woodley Bros.; 2, W. Woodley.—XXVIII. Best 6 1-lb. sections and 6 glass bottles of not less than 1-lb. each from apiaries of not more than five stocks: 1, A. L. Cooper; 2, O. Martin; 3, Mrs. M. H. Cobb.—XXIX. Best exhibit of run or extracted honey, in glass jars: 1, M. Whittle.—XXX. Best 24 lbs. of run honey, in 1-lb. or 2-lb. glass jars: 1, M. Whittle; 2, John Rayer, junr.; 3, A. D. Clegg.—XXXI. Best collection of pure bees' wax: Silver medal, W. Woodley; bronze medal, Woodley Bros.; certificate, W. B. Webster.—XXXII. Best home-made hive, the work of an amateur (not being a carpenter or joiner): Silver medal, A. E. Fry; certificate, A. H. Miller.

Cottagers' Classes.—XXXIII. Best super of honey (not being sectional): 2, Joseph Wicks.—XXXIV. Best exhibition of honey in the comb, taken without destroying the bees: 1, F. Woodley; 2, Joseph Wicks.—XXXV. Best 12 1 lb. or 2 lb. sections of comb honey: 1, F. Woodley; 2, Joseph Wicks.—XXXVI. Best 24 lbs. of run or extracted honey, in bottles or jars: 1, F. Woodley; 2, Joseph Wicks.—XXXVII. For driving bees: Silver medal, Stephen Knight; Bronze medal, Uri Dore.

BERKSHIRE BEE-KEEPERS' ASSOCIATION.

Faringdon Horticultural Show.

A special feature was made this year in connexion with the bee show. The Berkshire Bee-keepers' Association had a tent erected on the ground, in which at intervals Mr. Fewtrell, first-class certificated expert, delivered short lectures on bee-keeping. Prizes were also offered for honey, &c., a list of which is given below. A large number of persons visited the show during the afternoon, and evinced much interest in the proceedings, and the various articles of latest and improved make for the more successful and humane manner of taking the honey, &c., which were exhibited, amongst these being an eighteen-frame Observatory hive, brought by Mr. Baldwin, of Fairford; a one-frame Observatory hive, by Mr. F. Burrell, Faringdon; a number of bee-culture apparatus by Mr. A. D. Woodley, of Reading, expert to Berks B.K.A., a honey extractor, &c. The show of honey exhibited was of very fine quality, and this was sold by auction at the close of the show by Mr. J. Habgood. Mr. F. Burrell, the hon. sec. of the Faringdon District of the Berks Bee-keepers' Association, has worked hard to make the show and competition a success, and his efforts were rewarded by the interest taken in the same. There were fifty-five competitors for the whole of the prizes offered. The following is the prize list:—

Twelve mile radius.—For the competitor, who shall in the neatest, quickest, and best manner, drive a stock of bees from a straw skep and capture the queen: 1, Mr. G. Baldwin, Fairford, 9 minutes 2 seconds, 15*s.*; 2, Mr. F. Burrell, Faringdon, 15 mins. 10*s.* For the best six 1-lb. sections (glazed): 1, Mr. D. Sharpe, 10*s.*; 2, Mr. L. Inwood, 5*s.* For the best 6 lbs. run honey in 1-lb. glass jars: 1, Mr. J. Goodman, 10*s.*; 2, Mr. F. Burrell, 5*s.* For the best collection of pure bees wax: 1, Mr. Keep, 5*s.*

Faringdon District.—For the best 3-lb. sections (glazed): 1, Mr. A. Goddard, 10*s.*; 2, Mr. L. Inwood, 5*s.* For the best 3 lbs. of run honey in 1 lb. glass jars: 1, Mr. J. Goodman, 10*s.*; equal second, Mr. L. Inwood and Mr. F. Burrell, 5*s.* For the best standard frame of honey: 1, Mr. L. Inwood, 10*s.*; 2, Mr. F. Liddiard, 5*s.*

Cottagers.—For the best 2 lbs. of honey in the comb: 1, Mr. W. Ilott, 10*s.*; 2, Mr. W. Morris, 5*s.*; 3, Mr. H. Beleher, 2*s.* 6*d.* For the best 4 lbs. of run honey in glass jar: 1, Mr. W. Ilott, 10*s.*; 2, Mr. W. Morris, 5*s.*; 3, Mr. W. T. Jordan, 2*s.* 6*d.*

DORCHESTER BEE-KEEPERS' ASSOCIATION.

This Association through adverse circumstances has had to draw in its horns, but it has been gallantly trying to do its best; and we are happy to state that not only do a great number of people keep bees which did not know the advantages of them a short time ago, but the old method of taking the honey by destroying the bees has nearly disappeared.

The tent of the Association visited Weymouth on August the 12th, and the expert, Mr. Antell, gave several manipulations during the afternoon assisted by the Rev. L. Stanton and Mr. W. H. Dunman. These manipulations were conducted in a very small space, and there was a great number of horses and carriages, besides hundreds of people passing close by continually, but there was not one case of any person being stung during the day.

The Annual Show of the Association was held at Portland on Thursday, August 19; and although the entries were not so numerous as they have been on several occasions, the quality was everything that could be desired.

The awards were as follows:—

Honey.—Twenty-four 1-lb. sections of comb honey: 1, silver medal, Mr. W. H. Dunman, Troytown; 2, 10*s*., Mr. Antell, Puddleton.—Twelve 1-lb. sections of comb-honey: 1, 10*s*., Mr. Dunman; 2, 5*s*., Mr. Antell.—12-lbs. run honey: 1, certificate and 10*s*., Mr. J. Elliot, Portland; 2, Rev. N. W. Gresley, Milborne St. Andrew; extra, Mr. H. Russell, Portland. Cottagers—12-lbs. of comb-honey: 1, bronze medal and 10*s*., Mr. R. Comben; 2, 5*s*., Mr. Elliot; extra, Mr. J. Woodland, Troytown.—12-lbs. run honey: 1, 5*s*. Mr. R. Comben, Portland; 2, 2*s*. 6*d*., Mr. J. Elliot, Portland.—Straw skep of bees (not being this year's swarm): 1, bar-frame hive, Mr. Comben.

The judges were the Rev. H. Everett, and Dr. Hussey, both of Dorchester. The tent of the Society was also in attendance, and a great number of people visited the show.

The tent was also sent to Wimborne on August 25, in connexion with a horticultural show, and a prize given to the cottager who produced the best hive of bees in a straw skep.

HANTS AND ISLE OF WIGHT ASSOCIATION.

Highcliffe Show.

The fourth Annual Exhibition of hives, honey, &c., was held on Wednesday, August 25, at Highcliffe, near Christchurch, the seat of Louisa, Marchioness of Waterford. Her ladyship who is a Vice-president of the H. & I. W. B. K. A., and a most enthusiastic supporter of the modern system of bee-keeping, has hitherto very kindly permitted the exhibition to be held in her grounds. The honey and bee tents were pitched on the same sites as last year, but the weather which last year seriously marred the beauty of the view from the show ground, was this year all that could have been desired. In spite of counter-attractions at Bournemouth, in the shape of regattas and lawn-tennis tournaments, there was a very large attendance, and the exhibition must be reckoned the most successful from all points, that has as yet been held at Highcliffe. The honey classes, especially those for extracted honey, were very well filled, the result being a very fine display of excellent honey; and indeed, the judges, Mr. E. H. Bellairs and Mr. L. G. Jephson, must have almost regretted having so kindly undertaken the task of judging, as their duties were far from light.

Mr. E. H. Bellairs, the Hon. Sec. of the Association, was for the day out of harness, as the exhibition was managed by the local secretary, Mr. E. F. Maberly, who, however, prevailed upon Mr. Bellairs to give one of his by this time well-known lectures in the bee-tent. The lecturer laid great stress on the enormous quantity of foreign honey that was annually imported into the kingdom, and strongly advised those present to be satisfied with nothing less than English honey, remarking that, as an article of food, it was unsurpassed, and that by buying English honey great assistance would be rendered to the rapidly growing industry of bee-keeping; he also begged his audience to give a preference, in buying, to cottagers' honey: and his words were very literally taken, for no sooner was the lecture over, than several ladies entered the honey tent and specially asked for cottagers' honey, the result being that some cottagers sold every ounce of their honey.

There was a good show in the comb-honey classes, but the appearance of many of the exhibits was spoilt by the sections being staged unglazed. There were also two very fine exhibits of honey (not for competition) belonging to Mr. Bellairs and Mr. Ogg, that attracted universal attention and admiration. At 5 p.m. the successful competitors, in the presence of a large audience, received their prizes from the hands of Lady Waterford, in the splendid hall of the castle. Her ladyship expressed great satisfaction at the success of the show, and at the number and quality of the exhibits.

At the conclusion of the ceremony of distributing the prizes, Mr. E. F. Maberly gave a second lecture in the bee-tent, the practical part of the work being done principally by ladies of the audience and two little children. Most of whom had never been inside a bee-tent before.

The local Secretary had offered a cottager's hive to be drawn for by all cottagers and artisans who were present on the ground, and when the second lecture was over some sixteen names were handed in, about half-a-dozen of which were not bee-keepers. Mr. Manning was successful enough to draw the lucky number, and as he is not a bee-keeper it is to be hoped that his success will induce him to make a start; in fact, a cottager was overheard saying that he was going to sell Mr. Manning a stock of bees.

The second prize for the drawing, a briar-wood pipe, was won by a cottager's wife, who carried it away in great triumph, and who will doubtless have it framed and handed down as an heir-loom in memory of the Highcliffe Show of 1886. Subjoined is the list of awards:—

Class I. Most complete bar-frame hive: 1, Tanner, 10*s*.; 2, Forward, 5*s*.; 3, Chambers, 2*s*. 6*d*. (three entries).—II. Best 12 lb. super honey: 1, T. Hiseock, 1*l*.; 2, Chambers: 10*s*.; 3, Woodley, 5*s*. (six entries).—III. Best 12 lbs. extracted honey: 1, A. Pearce, 10*s*.; 2, Mrs. Stuart, 5*s*.; 3, Mr. Tarrant and T. Hiscock equal, 2*s*. 6*d*. each (eleven entries).

The following classes open only to cotters and artisans within ten miles of Highcliffe.—IV. Best 6-lbs. super honey, I. T. Hiseock, Bronze medal and 10*s*.; 2, G. Ogg, Certificate and 5*s*.; 3, H. Stephens and Mrs. Burgess, equal, 2*s*. 6*d*. each (nine entries).—V. Best super of honey: 2, Mrs. Burgess, 2*s*. 6*d*. (one entry).—VI. Best beeswax, not less than 3 lbs.: 1, Mrs. Burgess, 5*s*.; 2, A. Stephens, 2*s*. 6*d*.; 3, Forward, 1*s*. (nine entries).—VII. Best home-made bar-frame hive: 1, A. Stephens, 10*s*.; 2, T. Hiseock, 5*s*; 3, H. Stephens, 2*s*. 6*d*. (three entries).—VIII. Best wasps' nest of this year: 1, Mrs. Burgess, 5*s*. (one entry).

Honey Used in Making Gold Ink.—Genuine gold leaf is rubbed with honey on a plate of agate or ground glass by means of a flat pestle, until the whole presents a uniform mass, in which no distinct particles of gold can be recognised. This mass is carefully removed into a vessel with water, which will dissolve the honey and leave the gold in an extremely disintegrated state behind. The water has, according to the size of the vessel, to be removed twice or three times, when all the saccharine matter will have been washed away. The remaining gold is then mixed with a sufficient quantity of a solution of gum arabic, shaken well, and is ready for use. The writing is to be rubbed, after drying, with a flat piece of ivory, when it will present the lustre of pure gold. Silver ink is prepared in the same way, from silver leaf.—*Toledo Blade.*

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

RULES AND SCHEDULES OF PRIZES AT BEE SHOWS.

[548.] Can anyone suggest any device by which both judges and exhibitors can be induced to study the above *beforehand?*

Of course there is an obvious way of punishing exhibitors for breach of rules, namely, by refusing either to stage the exhibits or return entry fees; but this would be an unpleasant duty for the Hon. Secretary, and would probably cause the offending exhibitor to withdraw his subscription. If exhibitors only had an idea of the unnecessary trouble and loss of time caused to those who have to unpack and stage the exhibits by non-compliance with the rules, &c., they would surely be more careful.

A more difficult question is how to ensure compliance with rules and schedules by those who so kindly undertake the unenviable office of judge. This is really a very serious matter, and likely to cause much unpleasantness at shows, and deter many from exhibiting again, and incline some County Associations to give up offering prizes until this matter is *authoritatively* settled. Of course any *apparent* miscarriage of justice at a show held by B.B.K.A. is a far more serious matter than if it occurred at a local one.

Is it the duty of the Hon. Secretary to read over the rules and act as 'assessor' to the judges? or are they responsible for doing this? In either case, should their 'award be final' if they ignore the printed rules? If any of the B.B.K.A. rules are thought *capable of bearing two interpretations*, the sooner they are made unmistakable the better.

Of course all the County Associations are accustomed to look up to B.B.K.A. for guidance and example, and refer to B.B.K.A. rules, in case of any differences between the committee and exhibitors; but I fear we can do so no longer, unless some satisfactory explanation can be made public, as to some of the awards at the recent grand Show of B.B.K.A. at South Kensington.

Many of your readers know the circumstances which give rise to this letter. Rule XI. in the South Kensington Schedule specifies that 'all bottles are to be securely *corked*.'* This was *acted on by the judges in Class V.* (thirty-six 2-lb. bottles of run honey), and one of the finest exhibits from Suffolk disqualified and marked 'No corks.' What was our surprise then (I was accompanied by four members of our Committee) to find that the first and third prizes in *Class I.* were awarded to the two counties (Nos. 7 and 9) who had *most completely* violated Rule XI.! (I believe *all* had done so in a slight degree, or I should not have staged the one dozen and nine uncorked bottles which appeared on the Wilts stand.) In No. 7, Class I., the most striking of all, not a bottle was corked; it also occurred to us, and many others, that it was impossible that the large amount of honey so tastefully displayed on this stand—every bottle of the same shade—could have been 'supplied by *at least ten* members of the County Association *residing in various parts* of such County,' unless all was first mixed in one vessel and then drawn off into the bottles; in which case *the Schedule was not complied with*, but of this there was no proof, and our opinion may have been wrong.

Previous to the awards being made known, it was resolved by the members of our Committee who were present, that if Class V., No. 106, was disqualified, and prizes awarded to Class I. Nos. 7 and 9, I should enter a formal protest, which I immediately did, backed up at the time by other County Secretaries, and some other members of B.B.K.A. Committee, but no notice has been taken of it, neither have letters on the subject which two of my friends in other counties intended writing appeared in your pages. I was asked to withdraw my protest, but refused to do so, on the ground of *Rule XI. having been acted on in Class V. and ignored in Class I.*

I can most positively state that the fact of Wilts not gaining a prize was not the ground of our protests (for with the smallest show of honey we were fortunate enough to gain the Certificate), but the fact of Rule XI. being *acted on in one Class and not in another.*

Other Rules were also broken by many, notably Rule VIII., which is *repeated* in Rules X. and XI., one which especially benefits the exhibitor—number of exhibit and class to be legibly marked on *each article.* If Rules are not to be enforced, the sooner they are abolished the better.

I am sorry to be obliged to write as I have done, when taking the Exhibition as a whole everything was so satisfactorily arranged, and all must feel that the greatest credit is due to those who had the management of such an important undertaking.

I cannot conclude this long letter without expressing our thanks (in which I am sure all who were engaged in the Exhibition will heartily join) to the indefatigable Secretary, Mr. Huckle, for his forethought and the courteous and obliging way in which he from first to last fulfilled his difficult and manifold duties.—W. E. BURKITT, *Hon. Sec. Wilts B.K.A.*

* N.B. This rule, among others, was proposed at B.B.K.A. Quarterly Meeting with County Delegates on January 20th, and confirmed by the Committee on March 24th, and duly published in *British Bee Journal* of April 1st (*vide* pages 33 and 137), so it must have been well known to all members of B.B.K.A.

STAFFORDSHIRE BEE-KEEPERS' ASSOCIATION.

[549.] The Committee of the above Association have held their annual exhibition of bees, honey, &c., for some years past, in connexion with the County Agricultural Show; but this year, to the surprise and great disappointment of the bee-keepers in this neighbourhood, they decided to hold it in connexion with another show at Wolverhampton, instead of at Uttoxeter, with the Staffordshire Agricultural Show. As soon as it was made known that the exhibition would be held at Wolverhampton, I appealed to the Committee through our county paper, and tried to show that there were many reasons why the show should have been held at Uttoxeter; which is the centre of a large agricultural district, and a much more suitable place for a bee and honey show than a large manufacturing town like Wolverhampton. However, no reply was made to my appeal, and eventually the exhibition took place at Wolverhampton, and from the Report I should say proved anything but satisfactory.

From what little I have heard since the show took place, I learn that our Committee have a difficulty in making arrangements with the Committee of the county Agricultural Society. If this is so, I should suggest that the Staffordshire Bee-keepers' Association should hold an annual exhibition and honey fair themselves,

independent of any other show whatever; and I venture to think that, if the show was held at the right time and in the right place, real good would result from it; and as the Potteries Wakes takes place in the first week in August, and is a general holiday for at least a week, I ask the Committee to consider whether it would not be advisable to take advantage of this holiday, and one day during the said week to hold an exhibition—say at Stoke-on-Trent, or Stafford, or some other central place easy to get at. It is my opinion that if such an exhibition was got up, previously well advertised and a good number of prizes offered (not necessarily large ones), and the bee-keepers themselves did all they could to get as many as possible of the right sort of people to attend—chemists, grocers, &c., that the bulk of the honey crop might be disposed of there and then.

While I am sorry and disappointed that the show was not held at Uttoxeter, I have no doubt that our Committee did what they thought to be the best, and I have only one object in writing this letter, and that is, the good of my brother and sister bee-keepers in the county of Stafford.—F. H., *Uttoxeter, August 26th.*

SOUTHAMPTON SHOW: COLOUR OF HONEY.

[550.] Having been from home a few weeks, I had not seen your *Journal* of the 12th inst., till my return home. Hence the delay in sending you a few additional remarks to the account in that number of the Hants and Isle of Wight Bee Show at Southampton. I can quite endorse all your remarks on the great enthusiasm shown by all classes to the royal visitors and the magnificent display of decorations exhibited for more than two miles going from Westwood Park and the return by another route. But I certainly did not see so much enthusiasm on the object of bee-keeping as I expected. I entered the show ground just before H.R.H. the Princess Beatrice arrived, and while the royal party were in the bee-tent I took the opportunity of going through the flower tents. Then seeing the vast assemblage had retired from the bee tent, I went first into the honey tent in which I found about twenty visitors; but not one exhibitor or any one to explain any of the exhibits, so I took that office on myself for a short time; and had I been so disposed, and purchasers sufficient, I might have sold most of the exhibits! And now I come to the chief purpose of my letter, and that is, I was surprised to find that the darkest honey was awarded first prizes, and the light amber colour the third. Had I been judge I should have reversed this. I found the same thing done at the show on Southsea Common, when I bought some of this dark Hants honey, which, when placed on the breakfast table no one seemed to relish, as they said it did not look like honey.

I see among your advertisements 'Honey wanted, of good colour.' What is a good colour? The Hants judges would say, the darkest; go to another county, and the judges would say, the light amber colour, which crystallises nearly white. But it may be said, its sweetness and taste must be considered before colour: but this dark honey tasted to me very rough on the tongue and not so sweet as the light white clover honey. I think there ought to be some recognised colour in judging honey, of course taking into consideration particular localities and time of year the respective shows are held—for instance—heather flowering, and let it be labelled as such, and I consider the public would generally prefer the light-coloured. But to return to this Southampton show. I was surprised again to find a super about two-thirds filled with comb and honey awarded first prize. I expect at many shows, it would not have been noticed, as it was incomplete.

I then went into the bee-tent; there was in it an old straw skep nearly covered by bees crawling over each other apparently more dead than alive. I was glad to see no visitors noticing them, or certainly they would have gone away, with some doubts about the more humane system of bee-keeping. I left the grounds about half past two, with the hope that in the evening and on the Monday following far greater enthusiasm was evoked in the advance of bee-keeping than I saw.—A. F. B.

BEE-KEEPING DEMONSTRATIONS.

[551.] What county secretary has not felt the shortcomings of the usual tent manipulations at flower and agricultural shows? the everlasting bee driving from skeps, as if that were the only thing a modern bee-keeper has to learn? the admiring audience, most of whom look upon the whole affair as a mere jugglery show? the almost total absence of the class wanted most, namely, cottagers, for they cannot come until after work?

Cannot the work be done more efficiently by private demonstrations in the garden of some bee-keeper of influence, who will undertake the invitations? they must be held during June or July (on account of the long evenings), not earlier than six o'clock so that labouring men can come after work.

Here is the card of invitation—

HEREFORDSHIRE BEE-KEEPERS' ASSOCIATION.

A Private Demonstration in Bee-keeping

Will be given in the Garden of _____

____ *on* _____ *at* _____

o'clock in the Afternoon, when your presence is invited.

A Protecting Screen will be erected, and explanations of the Methods of Modern Bee-keeping given by the Association Expert.

Mr. _____

A demonstration of this kind which the writer conducted at Leintwardine this year with the co-operation of Dr. Cartwright, in whose orchard it was held, proved a complete success. Six o'clock was the hour, and by that time the screen (the only 'fixing' brought) was encircling four bar-frames out in the orchard, the ends being fastened to trees and stout poles driven into the ground supporting the intermediate part. No lack of interesting work to be done: one complete rack of sections to come off, other racks with a few sealed sections to be replaced with empty ones, means of showing a hive in its natural state, a hive which had swarmed and its swarm to illustrate the natural history of the queen by; and as the manipulations proceeded, point after point in practical work arose and received explanation. Quite a satisfactory number of bee-keepers present, many from adjoining villages, and perhaps half labourers; and so much pleasant chat that it is nearly eight o'clock before it is over.

At another similar gathering at the house of our good friend, Mr. Charles, of Caerswall, the expert (Mr. Hole) operated. The evening was wet and so the screen was stretched across a French barn and the audience placed in the dry, a bar-frame hive being carried from the bee-house close by for explanations; this, too, was satisfactory in all but weather.—Alfred Watkins, *Hereford.*

[In a communication from Mr. Watkins he says, in reference to the slides exhibited by Messrs. Abbott, for which they were awarded a silver medal, 'It is only justice to me to explain that twenty-seven of these slides (including all the micro-photographs from nature) were printed by me from negatives taken by me. I was not aware of their being exhibited until I saw them staged. The total number of slides shown was, I think, six dozen.'—Ed.]

EFFECTS OF BEE-STINGS.

[552.] A few years ago my husband (a bee-keeper) was stung about the ankle. Not appearing at dinner I sought him, found him reclining in an armchair. The whole of his skin being black—perfectly so, like a nigger. I did not express any alarm, sent my son to the kitchen for a cup of hot broth, made him (my husband) drink it as hot as possible. Still being black I gave him a wine-glassful of brandy, put a cold lotion, equal parts of gin, vinegar, and cold water on his head; in fifteen minutes my remedy had worked a good effect. He changed to a bright scarlet with white patches like blisters all over him. We had loosened all his clothes, then laid him on the bed, where he soon went to sleep. It was a hot July day, my doctor lived eight miles from our house. We were then at Merton Abbey, Surrey. He said I had done quite right, but some liquid ammonia in the brandy would have been proper. My husband has often been stung, and says that all the former stings throb, showing how the poison travels. Only once has he appeared a nigger. You can well imagine our great alarm, also our gratitude, when he was restored.—Mary Clark, *Parkholme, Langley Avenue, Surbiton.*

LESS LIGHT. (527.)

[553.] I trust 'Sedens in Antro' will pardon me if I suggest the above as a more fitting title to his article than 'More Light.' I quite sympathise with him in the difficulties under which he and hundreds more labour, viz., from having too much advice, and that of a varied and somewhat contradictory character. Every week we have suggestions from 'men of light and leading' in the fraternity, some of which are 'lights shining in a dark place,' others are beacons, warning us of dangerous quicksands; but somehow the rays of each get intermingled and show us that it is possible for the old adage to read better thus, 'In the multitude of counsellors there is confusion.' I think what 'Sedens' really requires is either 'less light,' or more filtration and concentration. If we could get our Editor to favour us with a foot-note 'dictum,' such as 'We agree with——,'or 'We think our friend's conclusions are wrong,' the beginner would know what to do. The young bee-keeper, like the early Christian, must have the law laid down emphatically at first by the missionary and follow its requirements to the letter. Afterwards, when the eye becomes more inured to the light and more practised, it can grasp further revelations, and soon, by a logical process, enjoy and share in the most advanced theories. As an amateur myself my advice to 'Sedens in Antro, and other seekers for guidance, is to buy *Modern Bee-keeping* and the *Bee-keeper's Guide-book*, and swear by them until practice (if ever it do!) enable him to query or amplify their directions.

To gather together a library of bee-books, to read them, and try to reconcile their teachings, is perhaps even more confusing to the beginner than for the Sandwich Islander to muddle himself by studying translations of the works of the Christian Fathers on disputed doctrines of transubstantiation and the like. Let him have his Kirby and Spence, and Huber, as his ancient classics, and the two works I named as representing the modern, along with the *British Bee Journal* for current light, reading, and speculation, then the curriculum, in my opinion, is complete. Practice alone will then give 'more light' and advancement. 'Sedens' must excuse me, if I say that to find fault because 'Useful Hints' says, 'Do so-and-so in the middle of the day' (and he is away from his hives), 'Cage the queen,' &c., when he has again and again sought for her in the hive in vain, though he has had the rare privilege of seeing her many times outside, &c., betokens a condition which a steady course of 'guide-book,' with the possession of his swarm or two, would soon alter. No one who seeks for knowledge can be branded, as he is willing to be branded, but the remedy is in his own hands, and for the beginner the cry should be 'Less light in the queen's name!' with editorial, and even dictatorial decisions. By-and-by, like little Oliver Twist (and, as a recent reader appealed to Mr. Useful Hints), he will dare to ask for 'more.' As your correspondent is, like me, living in the cool north, let him apply the instructions of his *B. B. J.* in the week following issue, and he will not be far wrong, for the time elapsing from time of writing to publication will account for the difference in climate.—R. A. H. Grimshaw, *Horsforth, near Leeds.*

QUEEN INTRODUCTION.

[554.] With your kind permission, I would like to give a little of my experience in queen introduction. By the *British Bee Journal* the vexed question seems to be: Which is the safest way to introduce a queen? Until this year, I have not had much experience on the subject, but having lost a queen, was compelled to try my hand.

My first experiment was in July with a queenless stock, and without brood in any stage. I was fortunate enough to obtain a queen from a neighbour. I carried her to my own apiary under a tumbler-glass inverted on a plate. I then lifted the covering from the hive-top, drove the bees back with a few puffs from my pipe and let her run in.

I made that introduction about noon. She commenced laying immediately. About a week after a friend brought me a Ligurian queen. We took the old queen from a swarm, and introduced her at the top of the frames; but this time sprayed them with thin syrup mixed with a little peppermint. In a few days I examined them, and to all appearance she was all right. After she had been in the hive about three weeks, I had occasion to examine them, when I found they had the queen balled on one of the combs. In attempting to liberate her with a feather, they all fell together on the floor-board. I immediately sprayed them with syrup and closed them up. The next day I examined them again; but, as soon as I lifted the bar with the queen, the bees seemed to rush at her, and immediately balled her again. Would some bee-keeper kindly give an explanation why the queen should be balled after being in the hive three weeks?

Last week I introduced another queen. This time I sprayed the bees in the same way, but introduced the queen at the flight-hole. This introduction was made about eight o'clock at night. In four days I examined the hive, and found the queen all right, and laying abundantly.—Far North.

QUEEN INTRODUCTION: A SUCCESS AND A FAILURE.

[555.] Having read so much lately in the *British Bee Journal* on this subject, I decided to experiment with my bees. I have always been successful with Abbott's cage, but wanted to try a quicker method, and, having noticed how easily driven bees unite, I concluded that the plan of dispossessing the bees of their combs would reduce them to the same condition, ready to accept anything.

Between 6.30 and 7.30 I proceeded to transfer black queen to Ligurian stock and Ligurian queen to black stock. Armed with pipe and without veil I captured black queen, put her in chip-box, and replaced quilt. I then proceeded to do likewise with the Ligurian queen; but these being the vilest-tempered bees, I put pipe out and lighted smoker, saturated a cloth with strong solution of Calvert's No. 5 carbolic acid, put on veil and commenced operations, my shirt-sleeves being well turned up. But before I succeeded in finding queen I was badly stung on hands and arms; I put queen in another chip-

box, and determined to be revenged for this and many another bad day's work with this stock, so put on wet carbolic sheet and smoked furiously top and bottom; there was plenty of stores, and I gave them plenty of time. Then I commenced to shake the bees into a deep box, when the battle began in earnest, and before I had cleared the ten frames my hands and arms were covered with stings, how many I cannot guess, for as soon as I had loosed last frame I scraped bees and stings off my arms with a knife and returned for a few minutes to get *up steam* with smoker—I had previously well wetted my hands and arms with the carbolic solution. But I was determined to intimidate these demons, and in the course of five minutes more they were as submissive as possible, I could scoop them about with my hands without a sting. Thinking they were now thoroughly demoralised, I gave them a good shake round and a puff of smoke and tumbled them on to board in front of hive, they immediately began fanning and in a few minutes were hurrying into hive; I put black queen among them and watched her run in, and concluded she would be alright. My hands and arms were now very sore and swollen, so, not caring what became of the yellow queen which bred such demons, and having had enough for one day, I just turned up quilt of black stock and tumbled yellow queen in without a puff of smoke, and covered up. Following day I found my black queen dead in front of Ligurian stock, and the day after I examined black stock and found Ligurian queen safe.

Now, Mr. Abbott, and all other veterans, don't laugh or sneer at a novice when I say, *I don't know the reason* why this should be; but if you can explain the apparent contrariness I shall be glad, and perhaps others may learn something from my success and failure.—NUCLEUS, *Betley, near Crewe, August 27.*

P.S.—The temper of above Ligurians is also a mystery to me, they are generally considered 'such gentle bees.' I can manipulate all my other stocks without either veil or sting. Ligurian stock is still queenless, what must I do with them?

[We scarcely know whether we should sympathise with the bees or their master. He had the pleasure (?) of perfectly dominating his bees for a time; they had the satisfaction of rejecting his proffered gift. He must get a new queen and try his powers again, or he must unite.—ED.]

SHOWS.

[556.] There is never a show of the British Bee-keepers' Association but some disappointed exhibitor writes to make complaints, and frequently most unjustly accuses judges of incompetence, if not dishonesty. One of your correspondents, L. Wren, on page 401, makes several statements which I am surprised you have allowed to pass unnoticed. He says he was impressed with the appearance of an assistant judge at a local show some few years ago, and was surprised to find on inquiring that 'he was the owner of two stocks, and commenced to keep bees about two years since.' Mr. Wren is evidently ignorant of the fact that the committee of the British Bee-keepers' Association provide one experienced judge, and that the local authorities invite gentlemen in their counties to act as assistant judges to gain experience under able leadership. There are many gentlemen of education and ability who are better bee-keepers in two years than many who call themselves practical bee-keepers after many years of bee-keeping. Your correspondent wishes you to believe that as the result of appointing such an assistant judge the wrong hive was awarded a prize. This is rather too much of a joke to believe. What about the experienced judge? would he have no voice in the matter?

He further says at the Colonial there was a hive in the 20*s.* class, which had a certificate awarded to it, the price of which on the front amounted to 30*s.* Those who visited the show and saw the hive will have seen that the hive complete was 20*s.*, and that the two extra crates at 5*s.* each had nothing whatever to do with the hive. This was particularly stated, and the card on hive contained a description of the parts comprising the 20*s.* hive, and no attempt was made to mislead the judges. Mr. Wren is, however, not aware that the judges are not provided with catalogues, and do not know the prices of articles unless they are marked. They have no option but to award prizes for articles found in the different classes, and if a hive of a higher price than that specified in the schedule is shown the prize should be withheld by the Committee. The judges have no means of knowing either the prices of the articles or the names of the exhibitors, the catalogues not being issued until after the awards. Mr. Wren is equally unjust in his other remarks, and would lead your readers to believe that the crates of sections noticed would require screw-drivers and strong arms to move them when propolised. Never at any show was a finer lot of section-crates seen than those at South Kensington, and they show a great advance on those formerly exhibited, and certainly none of the crates that were noticed would require either a strong arm or a screwdriver to move them, although some of those not noticed might. The judges were not novices, and were well able to award the prizes for useful inventions. Mr. Wren grudges Mr. Hooker the bronze medal he received, stating the invention was not complete. I do not see that it requires anything but to stand over a tub, which is to be found in every household. Probably, if it had been provided with a receptacle for receiving the cappings it would have had a silver medal instead of a bronze one: but it can hardly be called imperfect without, any more than a wringer would without a tub. It might be an enigma to some bee-keepers why certificates were awarded in some instances and useful articles of merit passed over in the class for useful inventions, especially if those practical bee-keepers were the exhibitors of those useful articles of merit, but I have no doubt it is no enigma to the judges. Do you not think all this complaining could be avoided if the Committee awarded the prizes according to the judgment of the exhibitor himself on the merits of his exhibits?—A VETERAN BEE-KEEPER.

NOTICES TO CORRESPONDENTS & INQUIRERS

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

H. W.—*Feeding and Feeders.*—You had better commence your rapid feeding about the 20th September. As to your feeder, the difficulty in giving a large quantity of syrup at once to last some weeks, has generally been that changes of temperature cause the syrup sometimes to escape too rapidly and at others to crystallise and block the holes. If by your invention you have guarded against this, and at the same time can regulate the supply readily, it should be a good one. To obtain recognition at a show you must show a full-sized apparatus.

R. WILLIAMS AND ANOTHER INQUIRER.—There are no symptoms of foul brood in the pieces of comb forwarded. The comb is old, and rather fusty.

M. B.—*Enamelled Cloth.*—Either of the samples enclosed will be found serviceable.

D. W. D. 1 and 2.—*Frames removed containing unsealed honey.*—By the end of September all the outside frames of naturally gathered honey will be sealed. If you doubt it you may remove one or two now, so as to compel the bees to cover all those remaining, and when they are sealed substitute those now removed. If you have to

remove any unsealed, extract the unsealed part (if not heather) and give the frames to the bees either behind the divider or in a box over the hive for a few hours. The unsealed honey will be carried away first. Combs with unsealed honey will not keep through the winter except in a very dry, warm place. Pollen may become a little mouldy, but will be cleared out by the bees when the combs are given to the bees. 3. *Sections after extracting.*—If you have no room behind the divider replace them in the racks over the frames to be cleared out. Do not put them away with honey in them. 4. *Bees crowded out after removing supers.*—You did quite right to give more room. If you read the article, you will see that the writer anticipated the objection which you make and explained the difference in the two cases. 5. *Result of Harvest.*—Fifty pounds of comb honey per hive besides extracted, is a very good result for this season, and shows your management to have been good.

G. D.—*Presence of Queens.*—Look more particularly over your stock for signs of brood. At this season of the year it frequently happens that there are only very small patches of brood, and, in exceptional cases, none; the absence of drones points at the presence of the mother bee; try and find her and satisfy yourself. In the event of your stock being motherless unite it to another having a mother or introduce an alien, the latter course in your case is preferable it being a strong stock.

J. J. S.—*Carbolic Acid.*—Use the acid as recommended in this *Journal;* it would necessitate a knowledge of the actual strength of your acid to give a definite answer, it varying very much. Calvert's No. 5 is cheap enough, and commercial carbolic is still cheaper; use the latter in a fumigator just as purchased.

Young Subscriber.—*Robbing.*—Robbing was the cause of the slaughter. See 'Useful Hints' in our two last issues and follow the advice there given.

Devonian.—*Removing Hives.*—We advise you to exlract the surplus honey at once, and to defer the removal of the hives until November or December. If removal now is imperative, extract your honey and remove the hives to a distance of two miles, and after three or four weeks bring them home to their new position.

C. C. James.—*Hairless Bees.*—1. The bees, with black and shining abdomen, were old bees from which the pubescence had disappeared. Colonies given to robbing their neighbours generally possess a considerable number of such. They are said to be subject to the disease *Bacillus Gaytoni* or *depilis. Uniting.*—2. Unless more particulars are given it is impossible to say the cause of your failure in uniting. It might have been that these robbers were known from their predatory habits, and so were refused and destroyed.

Ligusticus.—*Frames Parallel or Perpendicular to Entrance.*—We prefer the frames to range from back to front, both for winter and summer use. This is called the 'cold system,' and is all but universal in Europe and America, being more healthy for the bees, and it permits the raising of the hive at the back—a great advantage—without throwing the frames out of the perpendicular, or vertical, position. Hives on this plan are as easily worked, storified, and supered, as on any other, either for extracting or otherwise.

Inquirer.—*Cleaning Combs and Sections.*—See Reply to D. W. D. (2).

Rare Sips.—The honey has been gathered from a variety of sources. The result has not been very satisfactory. The honey is poor without much flavour. If you have the honey in sections, we should recommend that you should retain it in that form, and sell at a low price. We hope your expectations from the clover may be realised.

H. G. B.—Earwigs seek the hives for the sake of warmth. They are not desirable neighbours for bees; but they do not trouble them much. Strong stocks and well-made hives are the best safeguards against them. 2. *Croaking noise.*—A few months ago several correspondents gave us their experience of this noise. But there was considerable difference of opinion as to its cause. 3. Mr. Waters, of Chiselhurst, is the Secretary of the Kent B.K.A., who will give you the desired information as to the visits of experts.

Robert Huggins.—The Association frame being fixed, we should recommend that you should begin and continue its use. The outside dimensions are 14 inches long by 8½ inches deep, the top bar being 17 inches long.

J. J. Armitage.—We are obliged by the information you have kindly given, but the circumstances mentioned were brought out at the inquest of the unfortunate gentleman.

J. S. W.—*Ligurian Bees.*—The bees have the markings, or bands, of Ligurian bees.

A. B.—*Depilated and Shining Bees.*—See reply to C. C. James (1).

Robert Cowan.—*Observatory Hive.*—The required distance between the glasses is 1¼ inches. There should only be one comb, parallel, as otherwise the point of interest, seeing and following the movements of the queen, would be frustrated.

J. T.—*Sections.*—Sections should be sold as sections, not by the weight of so many ounces. The value of the sections is determined by the lightness or the weight of honey contained.

To whom it may Concern.—Mr. Benjamin Lomax, Brighton Free Library and Museum, Royal Pavilion, writes:—'On the 30th July, I ordered from one of the exhibitors in the Bee Exhibition, at about the centre of the eastern half of the southern counter in the Conservatory, a carbolic acid fumigator, and a bottle of mixture. I never knew his name, and fear he has mislaid my card, and therefore I take the liberty of asking you to act as "go-between." He noted in his book that I had paid for it, but perhaps did not also note my address.'

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

The Name and Address and Business of any Manufacturer will be inserted in this List, under one heading, for One Pound per annum. Additional headings, Five Shillings extra. Advertisers in 'The Bee Journal,' whose orders amount to Five Pounds per annum, will be inserted Free.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.

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Editorial, Notices, &c.

THE EXTENSION OF BEE-KEEPING.

It is greatly to be hoped that much practical good may result from the recent Conferences in connexion with the B.B.K.A. at the Indian and Colonial Exhibition. Too frequently it happens that such gatherings end simply in talk, or, at most, in the communication of a few facts, more or less useful, to the comparatively small number of persons who may be present. It may be thought to be our province to keep before our readers prominent points discussed, to emphasise ideas thrown out, and to urge plans proposed, if these seem worthy of further attention. We agree in this opinion; and therefore, we are desirous, on the present occasion, to concentrate the attention of our readers on a suggestion offered during the discussion on the Rev. F. G. Jenyns' paper 'On the Promotion of Bee-keeping amongst the Young:' this suggestion was to the effect that schoolmasters throughout the country should be communicated with, and their interest aroused in apiculture. Schoolmasters are the levers of the coming generation in all that is useful and practical. We are glad to be able to point to some of them as active county secretaries, and to others as local advisers; while we rank several of them among our most intelligent correspondents. If they can be persuaded to put forth the required effort in behalf of the progress of bee-keeping, the aim and object of our *Journal* will be assured.

It would not be a difficult matter for the Committee of the Association to draw up a short sketch of the pleasures and advantages of bee-keeping, and to circulate this in considerable numbers among teachers, at a reasonable expense. We urge this point because each schoolmaster and schoolmistress is an important centre of influence; and when once their interest in such a pursuit has been aroused, it could not but come to pass that many of their pupils and parents of pupils would be led to inquire into and take up bee-keeping. In many cases, too, where hives are already kept, new and approved methods would supplant old and condemned ways of management. Moreover, we believe a very direct benefit would be conferred on the teachers themselves. The introduction to them of a pursuit so fraught with interest to lovers of Natural History, the wide and charming fields of investigation opened up in connexion with bees, to say nothing of the almost assured success of an inexpensive amusement, could not fail to be attractive to many among so large a class of highly educated and earnest men and women. We incline to think a further, and by no means unimportant, benefit would accrue to schoolmasters and schoolmistresses from the hold they would get over pupils by associating them in such a recreation as bee-keeping. The familiar explanations of marvellous facts relating to the structure and habits of the insects; the exhibition of the interior of hives; the pointing out of the queen-bee in the midst of her subjects; the putting on of supers, and their removal when filled; the extraction of 'run honey,' and the occasional gift of a 'section' or small quantity of what has been taken from the combs, would kindle an immense amount of interest in the minds of thousands of young people, and bring together teachers and taught in most kindly feeling towards each other.

In these remarks we are not indulging simply in a pleasant theory. We know cases in which the above anticipations have been distinctly fulfilled, and we doubt not that abundant corroborative evidence could be furnished from many quarters.

Again, we are hearing more and more around us the cry for technical teaching, for instruction in matters which will be of direct practical benefit in after life. Without entering into the discussion of the true scope and the best methods of education, we may safely say that Apiculture presents both a science and an art which fulfil the chief requirements of those who take even opposite sides in the controversy about the directly and indirectly useful in intellectual training. On the one hand, the matter-of-fact scientist can have his views fully met by the training which bee-keeping gives in the observation, classification, and verification of phenomena, while the advocate of methods which call out the imagination, as well as the reasoning faculty, will also be able to be gratified by the domains of thought and feeling into which bee-keeping may lead; while those who, on the one side, care for profit in work, and those who, on the other, attach chief value to an art for its own sake, may equally lend a helping hand in disseminating a knowledge of apiculture, and in promoting practical instruction therein.

PHOTOGRAPHS OF THE SOUTH KENSINGTON SHOW.

Five views were taken of this excellent show, one of which gives a full-length view of the centre of the Exhibition 200 feet in length. The remaining four are sectional views taken from the main promenade leading from the gardens to the Albert Hall, and are very good; these, together with the photographs of the bee department at the Royal Agricultural Show held at Norwich, may be obtained upon application to the Secretary, J. Huckle, Kings Langley, price 2*s.* 9*d.* each, including packing and postage.

USEFUL HINTS.

The uncertainty of weather forecasts is exemplified by the extraordinary wave of heat and brilliant sunshine experienced since our prophecy in last 'Hints' 'that the honey season of '86 was ended.' Scarcely were the words in type before the honey-flow recommenced with us, although the chief flora on which the bees depend for surplus had passed away. From August 27th until September 2nd, our section-cases filled up more rapidly than at any time during the present season. Fortunately our bees consist chiefly of the Eastern races, and the second crops of red clover abounding in our district have yielded an unusual amount of nectar of the finest quality. With the thermometer at 86° Fahr., in the shade, and cloudless skies for a whole week, the bees have revelled in these clover fields, and the whole atmosphere has been redolent of their sweet perfume.

Whether this extraordinary weather proceeds from a seismic wave, as meteorologists suppose, and to which the earthquakes in New Zealand, the United States, Spain, the Peloponnesus, and Malta, would seem to point, we leave to *savans* to decide. Certes, our bees have profited in no small degree, and the extreme bustle and energetic work in the apiary—the outsides of the hives towards evening being literally covered with out-clustering bees—exceed anything we remember at this late period.

To many of our strongest colonies we were obliged to return the removed section-cases, and to raise the hives from the floor-boards, as we feared the melting of combs. Even now—September 4th—the weather continues warm and fine, after a cooler day or two, and bees are still working 'double tides.' All this will encourage late breeding, and, with proper management, colonies will go into winter quarters in excellent condition.

A heavy yield from the heather may now be expected, we trust, and that most delicious of all honey be found in abundance.

The Extractor, where necessary, may be kept at work until the middle of the month, when feeding should be no longer delayed.

Feed freely, and in large quantity, where outside combs have been extracted, and get it over by the first week in October. Later than this the bees will fail to seal over the syrup, which, turning acid in the hives, may prove a fruitful source of dysentery as spring approaches. The Americans practise a method of feeding we have not heard mentioned in English circles. The floor-boards of all hives, being fixed, *i.e.*, tightly screwed to the hives, each hive is raised two or three inches in front, and the syrup poured in at the back. The bees immediately store the syrup and quickly seal it. As much as 20 lbs. are given to a strong colony in a couple of days. The advantages claimed are that feeding is speedily completed, without the use of feeders of any kind, and there is no inducement to robbing. When the feeding is finished, the hives are returned to their original position, being slightly raised at the back. The method may be safely tried where floor-boards are not fixed except by propolisation by the bees.

Young Queens.—No better time than the present could be desired for supplying queenless colonies with young queens, or for cashiering aged ones.

An unlimited supply of young queens may be obtained from cottagers' driven bees, if care be taken to select those from after-swarms, or swarmed stocks. The queens from prime, or first swarms, should not be used as they are generally aged. When the honey-flow ceases or becomes less, and wasps and bees are given to marauding, our advice is to use the cage in preference to direct introduction, unless it be done when driving, and uniting, and that all manipulations should be performed in the early morning, or evening, when bees are not flying. After the subject of introduction has been so thoroughly ventilated in our columns, of late, any details here would be superfluous. Queens of all races may be obtained now at very moderate prices—a temptation to the amateur novice to try his hand. There is no royal road to queen-introduction any more than to success in other matters, and this is often purchased by painful experience. Nevertheless, no man becomes a thorough expert until he can successfully introduce an alien queen.

Winter Preparation will soon rank foremost amongst apiarian subjects, and since 'well begun is half done' it behoves all bee-keepers so to forecast as to have all their colonies quietly settled by the middle of next month, so that no further disturbance shall take place before the month of March. To this end at least 20 lbs. of sealed honey should be provided. A standard frame well filled with sealed honey weighs about 6 lbs.

The less pollen for wintering the better, and in estimating the weight of honey allowance must be made for pollen if present in the combs.

Combs stuffed with old pollen, upon which honey has been stored, weigh almost as much as sealed honey; all such frames should be removed before closing up for winter.

Storifying Hives—What are they? In the prize schedule of the late South Kensington Show, Class IX., it is said to be 'For the best and most complete storifying hive, with arrangements for summer and winter use.'

Since the frame-hive and standard frame have come into such general use, that they have driven almost all others out of the market, it would seem desirable that a full definition of a 'storifying hive' should be given in future schedules. Is it imperative that the hive should contain moveable frames, 'or simple laths, upon which the combs are built, or is a plain box, without frames or laths sufficient?' Again, is it required that the boxes should all have the same depth, like the Ribeaucourt hive, much used in France and Switzerland, which has a depth of 6½ inches, and of which as many boxes as required may be used by piling them one above another? or is the well-known Stewarton—which contains body (or brood) boxes of 6 inches deep, and honey boxes of 4 inches deep, all of which may be fitted with frames if desired—to be taken as a type of what a storifying hive should be?

Unable to be present at the Show, we are informed that the motley assemblage of hives in this class (twenty-nine in number), of which scarcely any two were alike, or even similar, caused loud complaints from exhibitors that no definition had been given. It certainly seems to us that no modern authority has pronounced, or laid down, any rules as a guide to what a modern storifying hive should be. We know what the Carr-Stewarton is of course, but it could hardly have been the wish of the compilers of the schedule to revert to this hive as a type. The question then is, are we to be driven back to the old bee-books for a definition, since neither Mr. Cowan's book, nor Professor Cook's, nor Root's *A B C of Api-*

culture, contains a description of a storifying hive? Shall we then return to the old storifying hives of l'Abbé Eloi, Ricour, Duconedic, Thorley, Wildman, and Keys, Madame Vicat, &c. Storifying, as applied to hives, certainly means the piling of hives or boxes upon each other. What, then, is the definition of a modern storifying hive? To us it appears that a body, or brood, box, containing eight or ten standard frames, supered or nadired by two or more honey boxes, from four to five inches deep, interchangeable in every way with the brood compartment, and fitted with frames, or sections, forms, or ought to form, a typical modern storifying hive. We hold, very strongly, that there is no necessity for all the boxes to be of the same size, but that it is advantageous, in all points of view, both as regards winter and summer use, that they should vary as above suggested.

ASSOCIATION.

NORTH-EAST OF IRELAND BEE-KEEPERS' ASSOCIATION.

This Association had their Tent in the Castle gardens of Lisburn on the occasion of the annual show of the Lisburn Horticultural Society, on Thursday, August 26th. The committee of the flower show kindly admitted a class for section and extracted honey into their schedule, and for a first attempt brought out a very fine display of honey in both classes. From early morn until midday it was constant rain, and it was thought inadvisable to erect the bee-tent; however, during the afternoon it cleared up, and Rev. W. H. Lett, M.A., Aghaderg, gave one of his usual instructive and entertaining lectures to a large and appreciative audience; at close of same, Mr. Wm. Ditty, of Newtonards, drove a straw hive, and captured the queen, which was handed round. Several straw-skeppist friends were talked to and arrangements made for driving their bees. Mr. Ditty, in face of very adverse circumstances, gave a most interesting lecture on management of bar-frame hives, and manipulated a bar-frame hive of hybrids (kindly lent by Mr. F. Hull, District Secretary of Association). The evening was getting advanced, and the audience was not as large as we would have liked; however, a very interesting display was made in face of wretched weather. Mr. Lonsdale, Lurgan, exhibited a beautiful Observatory hive of nine frames, and sent several hives and appliances of various descriptions. Mr. Morrow, Banbridge, sent one of his well-known hives, which was much admired.

Mr. F. Hull and his brother gave great assistance during the day. The arrangements were carried out by Mr. P. McHenry, one of the Hon. Secretaries, and he was ably assisted by the gentlemen mentioned. The judges were R. Niven, Esq., Chrome Hill, and Wm. Ditty, Esq., Morilla, Newtonards. The following is the list of awards:—Best six sections, 1 lb.: 1, F. Hull, Lisburn; 2, S. Hill, Banbridge; 3, W. Morrow, Banbridge. Best six 1-lb. jars extracted or run honey: 1, W. Lonsdale, Lurgan; 2, W. E. Best, Ahagalee; 3, S. Brown.

On Tuesday, August 3rd, the Banbridge Farming Society held their annual show at Banbridge, and have admitted honey and bees into the schedule. The North East of Ireland Bee-keepers' Association contribute half the amount of prizes. There was a very creditable display of section and run honey, also two very fine Observatory hives. The principal prize-winners were Mr. Samuel Hill and Mr. W. Morrow. Mr. Hill had the North East of Ireland B.K.A.'s tent on the grounds, and exhibited a very fine hive of Carniolans; he also had one of his bar-frame hives of blacks, which he manipulated, and exhibited the queen to the audience. Mr. Paul McHenry acted as judge for the honey; he also assisted Mr. Hill in tent. Mr. Samuel Hill, the District Secretary of the North East of Ireland B.K.A. is doing good work in Banbridge and district, and humane bee-keeping is being advanced.

On Thursday, September 2nd, there was a very fine display of honey at the Newtonards Flower Show, principally extracted. The Newtonards Horticultural Society very generously gave good prizes for three classes, and there was fair competition. Mr. Ditty, one of the prize-winners is District Secretary of the North East of Ireland B.K.A., and is doing his best to advance humane bee-keeping about Newtonards. The following is the list of awards:—1½ or 2-lb. sections: 1, Wm. Ditty, junr.; 2, Thos. Valentine. Supers, sectional or otherwise: 1, Wm. Ditty, junr.; 2, Thos. Valentine. 1 or 2-lb. jars extracted or run: 1, Miss Jane Watson; 2, James Watson; 3, George McCartney. The judges were Mr. McDuff, Belfast; Mr. Greer, Malcomson; and Mr. Paul McHenry, Hon. Sec. North East of Ireland B.K.A.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The Editor of the "British Bee Journal," c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C." All business communications relating to Advertisements, &c., must be addressed to Mr. J. Huckle, King's Langley, Herts (see 2nd page of Advertisements).

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

A PROTEST AGAINST THE PROTEST.

[557.] I much regret Mr. Burkitt's letter in this week's *Journal* respecting the awards at the Kensington Show. I fear it will do more harm than good. I quite allow that the rules were not strictly carried out by the judges in one class and were so in another; but, considering the circumstances of the case, and the extreme difficulty in which they were placed, the protest against the awards in Class I. ought never to have been made, or, at all events, upon 'second thoughts,' withdrawn.

There is no doubt that judges were quite right in disqualifying the exhibits in Class V., containing bottles without corks, which plainly transgressed the rules as generally interpreted (although another interpretation may very well be put upon it, and the B.B.K.A. must immediately so alter it as to make it clear). They could not, in justice to others have acted differently. But the county competition, Class I., was altogether so very exceptional and new in its purpose, and certainly had never been contemplated when the rules were made, that it might very well be considered exceptional and independent of the rule. Its object was not to show how honey ought to be prepared for the market, and to reward accordingly; but rather to exhibit the honey and capabilities of the different districts of England, and to make competition of quantity and good quality, combined with ingenuity and attractiveness of display. In this great and new competition, the fact of some bottles not being secured quite in the right way was really such a trifling matter that, in view of the wide scope and objects of the class, it ought never to have been made a subject of objection; and when the protest was persisted in, gave it rather in appearance the character of the outcome of jealousy than of a desire to promote the great objects of the exhibition. And let it be remembered what the result would have been had the judges acted differently, and disqualified all the county exhibits having bottles not properly corked. According to Mr. Burkitt's own showing, all the counties (although I believe this is not quite correct) would have been disqualified, 'all' having violated the rule 'in a slight

degree.' And, of course, if the rule was to be strictly enforced, even one single bottle uncorked would have been sufficient to disqualify the whole exhibit. What a fiasco! Every one of the county exhibits disqualified! What a laughing-stock it would have made the whole thing! After all that for months past had been said and done, after all the expensive preparations made, the prizes all withheld because, forsooth, a few corks had been omitted! It would, indeed, have brought ridicule on all concerned. As a member of the Herts Association, and a contributor to its exhibits, I should have felt ashamed if it had taken the first instead of the second prize on the strength of such a paltry objection.

Humbly, then, I beg to protest against the protest. It was valid, doubtless, in the strictest sense of the rule, and, if dealt with at all, would have to be dealt with accordingly, but I hope nothing more will be heard of it. Unless allowed to drop, it will only lead to much wrangling and profitless discussion, and will mar the result of the whole grand exhibition, and do great injury to bee-keeping at large—the great work in which we ought to vie with one another (and association with association) not in any spirit which may bear even the semblance of jealousy or fault-finding, but in friendly competition, with all good feeling and fellowship, and with the highest aims and widest sympathies. —F. G. JENYNS, *Knebworth Rectory, Sept. 2.*

SHOWS.

[558.] Before the experiences of the present season pass from memory, I should like to bring one or two points before your readers.

First, as to judges. That the supply of competent judges is not equal to the demand will scarcely be denied. How the number may be increased is an important question. I have already more than once advocated a plan, which I cannot but think would do something towards this end. I have proposed that experienced judges should at all large shows be accompanied by one or two persons who appear to have the qualifications likely to make good judges. These persons may be selected by the show committee, or permission might be granted to the judges to select their own assistants, if they wished to do so. At the Reading Show, the judges were hard at work, without even a pause for lunch, for nearly seven hours, awarding prizes in thirty-seven classes. Exhibitors and others do not complain without cause that the awards of many of the classes at such shows are not made known until the end of the day. With competent assistants these judges might have divided the classes between them, and then quickly have revised each other's awards and have finished in almost half the time.

With regard to rules and regulations. Would it not be possible for a code to be issued by the Committee of the British B. K. A., with the assistance of the County Representatives, under which all Affiliated Associations might hold their shows,—such a code to be amended from year to year, as experience proved advisable? As at present, at each show a judge has before him a different set of rules, to be interpreted by a different committee; the result too often proves unsatisfactory to all parties.

There are many points which appear year after year in schedules which need reforming, as for instance, the prize for 'the largest and best collection of honey:' the award in which class is constantly a fruitful subject for grumbling and dispute.

If I express a hope that some system of points for judging honey, hives, &c., may be established, I suppose I shall lay myself open to a considerable amount of criticism; but year by year I become more and more convinced that it is the only way by which consistent and satisfactory awards can be obtained.—J. LINGEN SEAGER.

PROMOTION OF BEE-KEEPING AMONGST THE YOUNG.

[559.] Allow me, as a country teacher and enthusiastic bee-keeper, a few remarks on the paper, discussion, and editorial on the above subject as it appeared in your issue of August 19.

First the paper: Mr. Jenyns says: 'In our schools there is the fatal obstacle of the system of Government grants depending upon results in certain fixed subjects, and in too many schools the teacher's salary made dependent upon these results, *so that it is his interest to teach that which pays best;* and until this system is greatly modified we must not expect bee-keeping to be a regular school subject.' This extract shows that Mr. Jenyns is a sound educationist. The pernicious system under which we work excludes much besides bee-keeping which we should like to teach our children. I hope, however, none of your readers will conclude that teachers in their efforts to secure a good grant are more covetous than other people. When a man's stipend consists of (say) fifteen pounds, plus a third of the school-fees, plus a third of the grant, plus five pounds for playing harmonium, plus five pounds for Sunday school (plus half-a-dozen offices for which he receives no payment), and after a year's slavery such as is not known in any other profession, he nets seventy or eighty pounds as his total income, you will not be surprised that he earns as much grant as he possibly can. Managers of schools are much to blame for engaging a man under such direct temptation to covetousness: parsons especially are great sinners in this respect.

There is, however, one thing far dearer to the schoolmaster than his hard-earned and miserable stipend, and that is, his reputation. When you consider that a single adverse report will blast his career, no wonder he is nervously anxious about his ninety-eight or ninety-nine per cent of passes which most managers regard as the sole object of his existence. The requirements of the *Code* leave no margin for anything outside it. Still, if an expert will visit my parish and wishes to do so, he shall 'give a lesson to the young' (as Mr. Jenyns suggests), *in spite of the Code.*

The proposal to 'devote a column of the *Bee Journal* to the young' would certainly fail of its object while the paper is at its present price.

Next, the Discussion: Dr. Bartrum said, 'In fact so little did they (the English) think of technical education that English children were given a whole holiday on Saturdays.' What monstrous wickedness and waste of time! Shocking! Does Dr. Bartrum know that but for that most blessed of days—Saturday—few Government schoolmasters would be able to get through their year's work? That such is the exhausting nature of their duties that Saturday is spent by hundreds in a miserable state of mental and bodily depression, and that it is only by the most determined effort that they can pull themselves together for the frequently not less onerous duties of the Sunday? Saturday—blessed day! —is the schoolmaster's Sabbath. Touch it not, or if you do enlarge your lunatic asylums at once.

As to the 'examinations in bee-keeping' which Dr. Bartrum suggests we are quite willing. Examinations form part of our daily diet. We revel in them. One more will not make much difference; but I am afraid the good doctor's eyes will grow dim ere he sees 'the time when all school children shall receive some instruction in bee-keeping as part of their scholastic routine.' He must first revolutionise the whole system of national education.

In your Editorial you say, 'Thirdly, and we lay particular stress on this, everything possible should be done to interest schoolmasters and schoolmistresses in bee-keeping.' In this, then, as in many other things, the elementary teacher is the hope of the nation. Surely mine office should be had in honour.

And yet, living as we do in country districts, it is, I think, reasonable to ask why more of us are not bee-keepers. I reply, there are two great reasons, viz., (1) *First outlay*, which many can ill afford, and (2), *Insecurity of Tenure*. So long as the schoolmaster is the shuttlecock of the parson, the squire, and the inspector, so long as he can be dismissed with or without reason by the former and deprived of his very means of existence by the latter, he is not likely to invest in such non-portable stock as bees and bee-hives. Why, sir, incredible as it may appear, there are places in this enlightened land of ours where the teacher's possession of a well-stocked apiary would be used as a reason for lowering his salary, or for grinding extra work out of him: and we shall shortly see appended to advertisements the statement that the advertised place 'is exceptionally situated for bee-keeping.'

To such of my fellow-teachers as have means and opportunity I would say, Keep bees! If only a single hive, keep bees! It is just the occupation many of you need; one of such absorbing interest that you will forget all about codes, inspectors, per-centages, and examinations, one that will tempt you out-of-doors more frequently than heretofore when fine, and find you pleasant occupation, other than that everlasting lie-and-read of yours when wet. The honey, too, will do you good, for, besides its splendid carbonaceous properties, you will find your throat and voice much benefited by its use, while that obstinate constipation, the result of your too sedentary habits, will gradually disappear under its gentle influence and the exercise you must necessarily take in acquiring it.

Fortunate in my school premises and inspector, and extremely fortunate in my managers—it was not always so—I have invested a considerable sum in hives and appliances. What I have done to extend bee-culture in the neighbourhood must be left for a future communication.—B. B.

A COUNTRYMAN'S VIEW OF SHOWS IN GENERAL, AND THE COLONIAL IN PARTICULAR.

[560.] Being myself an amateur carpenter, and having given considerable attention to the subject of 'cost of labour and material,' I venture to answer Mr. Wren's charge against our leading manufacturers.

I spent many hours examining the hives at the Colonial, and I unhesitatingly give it as my opinion that the hives shown there can be made in numbers for the prices stated, and with a small margin of profit. That small makers, unable to buy in large quantities and without necessary machinery, are at a disadvantage and could not produce them at the prices, I can readily believe. It is a serious matter to bring a charge of dishonesty in a public Journal against manufacturers who have the confidence of a large number of customers, and to insinuate that the judges have not the moral courage to set their faces against what amounts to a public fraud. —J. Lingen Seager.

HONOUR TO WHOM HONOUR IS DUE.

[561.] On page 378 Mr. Lyon says, 'Mr. Green's metal shoulders were, so far as I know, exhibited at the show of 1882 for the first time, not as a separate exhibit, but in a hive.' Messrs. Green and Sons did exhibit in 1882, but, as I stated distinctly on page 342 it was at the show of the previous year, 1881, that they obtained a bronze medal for a hive having frames with metal ends, and on reference to the list of awards for 1881 this may be seen. They also obtained a third prize the same year for a hive in another class. That Mr. Lyon's remarks may not throw any doubt as to this, I have ascertained that one of these hives of the 1881 show, with metal frame ends, was purchased by Mr. Daniels, of Newbolt, near Rugby, and that the following year, May, 1882, this gentleman was supplied by Messrs. Green and Sons with two gross of metal ends, clearly showing that they introduced them long before Mr. Lyon exhibited his in August 1882. Mr. Lyon goes on to say, 'And as to their being the parents of metal ends, why, there is no similarity whatever.' In this I entirely disagree with him, and I think you, Mr. Editor, will do so also when you examine one of Green's original metal ends, which I send you. You will see that the distance guides are metal castings, not 'simply strips of metal,' but cast for the purpose. The *idea* of keeping the distance between the frames, and of keeping the frames from the ends of the hive, is the same in all those that have been brought out by Mr. Lyon and others since Messrs. Green first introduced his metal ends in 1881. It is simply the manner of fixing the ends on the frames that has been modified. The original metal end was designed by Messrs. Green to work with the standard frames not having metal ends, so that all should be flush on top. The frames with metal ends of Mr. Lyon and others, if used in the the same way, will project ⅛ of an inch above the frames having no metal ends. The tops of frames being uneven, are inconvenient for putting on supers, &c., as I have frequently found, and prevent the freedom of interchange of frames, and necessitate having metal ends for all.

Messrs. Green and Sons were, I believe, the first who introduced metal girders in section crates, obtaining a silver medal in 1880 for one having these girders and springs instead of wedges.—John M. Hooker.

THE SALE OF HONEY THROUGH LOCAL SECRETARIES.

[562.] The portion of the Rev. L. Seager's paper read at the second Conference held in the Exhibition Rooms referring to the Honey Market has interested me greatly, because I have long wished to put a plan of mine into practice which will undoubtedly bring the customer and producer into direct relation with each other, if only I can be satisfied that it can be done in a business-like fashion. Ladies are proverbial for proposing unbusiness-like schemes; hence my diffidence in writing even this much. Mr. Walker says that County Secretaries are already burdened as much as they can be, and this task should not be laid on them. I agree with him up to a certain point. Are they not the advisers and supporters of their local Secretaries, who naturally write to them when in difficulty or in need of fresh instructions? Let a local Secretary ask himself what his duties are. The greater interest he takes in bee-keeping the more pains he will take to become personally acquainted with the members in his district, and not be content simply to enter their names in his book and claim the yearly subscriptions to hand on at stated times to the County Treasurer, &c. As the seasons roll on he ought to know which of the members are the best honey-producers, I do not say the most profitable, for that may depend on the success hereafter of my scheme; also which are to be most relied on for purity of honey and good quality, cleanliness, &c. Now let him keep a record of these, and let him take notice at any exhibitions where his members show honey the colour and quality of the honey, and which take prizes. The simpler the record the better. He will soon learn how to class them in a large reference-book, where different columns might show the price of either section, comb or extracted honey demanded by the producer, *or advised by the local Secretary*, for my experience of the past two years as L. S. proves to me that it is in our power to guide such demands. Many and many a time have members come to me to know what the price of honey is at such and such times, and having no market-guide to go by, I can but

use my discretion and private judgment in each case, while at other times I have had to explain to ladies ignorant of bees altogether the real value of 'these little boxes of honey which the man called sections, and would not sell under eighteenpence!' Does this not prove that we are a self-constituted order of *middlemen*, and have a right to use this power for the advantage of the Association to which we belong, looking for no remuneration or profit for ourselves, but desirous only of promoting fair play?

Having started a reference-book, it would become an object of pride to any member to be entered in its pages, and he would gladly communicate with the L. S., as each summer month passes, what quantity and quality of honey his hives are producing, and what quantity he wishes to dispose of. He is doubtful, perhaps, what price to ask, and leaves it to the judgment of the L. S. Now comes the practical difficulty. How is the L. S. to make known to the neighbourhood that honey of such-and-such quality and prices is to be obtained from such-and-such members of the B. K. A.? There are many ways in which it can be done. If the L. S. be a schoolmaster, for instance, he can make his boys copy from ten to a hundred slips of paper containing the list of names, Class A, B, or C, to which they belong, sections or otherwise, and prices, leaving these last columns blank, to be filled in by him as the change of season causes a variation in prices. Or if he has a copying machine, the task will not be beyond his powers. Or failing any such facilities, let us ask our County Secretary if plain half-sheets of note-paper with simple headings and column lines printed would be too great an expense to afford us. Then such papers, signed by the L. S., would serve as guarantees of the honey being genuine, and they might be placed in all shop-windows, and there might be a monthly insertion of such lists in a local paper or parish magazine. That bee-keepers should find it eventually to be more to their advantage to become members of the B. K. A. in order to be mentioned in this list I have no doubt whatever, as a case very much to the point came under my notice this week.

Three bee-keepers are within a stone's throw of each other. One only is a member of the Association, and he had excellent good luck, but required help in looking through his hives, being very inexperienced. He comes and thanks me for the help given, and says how much honey he has now to dispose of, and can I advise him? This I do willingly, for his honey is the best managed and purest in all our village. 'But would I also help his neighbours to dispose of theirs?' Can I do otherwise than refuse unless they consent to join us?

The last practical question to be solved is how to regulate the prices according to seasons. And here I would ask the help of the County Secretary. If each local Secretary throughout the county sent a post-card report of *highest* and *lowest* prices of honey sold by private means in his district each month, say from July to November, could not a correct average be taken by the County Secretary, and be inserted by him in the *British Bee-keepers' Journal* as a monthly guide? I often look in the *Journal* for some such help, but have never yet found it.

I fear I have overdrawn your patience in reading so long a letter, Mr. Editor; and yet if you should find any signs of common sense in the proposal whatever I shall feel more than rewarded for the trouble it has cost me if you do but allude to it in words of your own.—A Lady Local Secretary.

[We have much pleasure in receiving the above letter, and consider the proposal it puts forth, if systematically carried out, would prove of the greatest advantage to bee-keepers. There is no more practical employment of those who kindly take upon them the office of local secretaries than to interest themselves in the solution of the ofttimes difficult problem of cottage bee-keepers, How shall we get rid of our honey? and to instruct them how to market their honey in a neat and attractive manner.—Ed.]

MORE, OR LESS, LIGHT.

[562.] If 'Sedens in Antro' take the hints given in your *Journal* and then try some experiments in manipulating his bees in the evening, instead of at the hours named as the *best hours* for doing these things, he will find that he can do a great deal—in fact, nearly everything he requires to do—sufficiently well during the hours after his work; and in this I speak from experience, as I do nearly everything required during the summer in the afternoon about seven o'clock, as like him I have no other time to do them. There are some things, of course, such as driving that cannot be done successfully too late in the day, and in any manipulations the evening should not be too cold or too dark, or he will find his bees seeking warmth under his coat-tails or in any portion of his clothing where they can get it. All the book or journal reading that he does will not teach him as well as practice, although to be a successful bee-keeper I advise him to continue taking the *B. B. J.*, in which he will get *Useful Hints* not only in the column headed with those words, but all through the *Journal*. Let him act on these and on experiments made to suit his time and he will succeed; but he can hardly expect regular bee-keepers who, of course, do everything at the most suitable time, to experiment at unsuitable hours and at all times for the convenience of those who will not do so for themselves.—Boz.

TOADS EATING BEES.

[563.] Can your corresponent, 'G. J. H.', or any other reader of the *British Bee Journal*, corroborate the following passage from F. T. Buckland's *Curiosities of Natural History*, Vol. I., pp. 42, 43?

'Toads are capital hands, too, at eating bees, when they can get no other insects. A gentleman in Oxfordshire had a hive of bees in the cavity of a wall: a common toad which had taken up its residence in a hole close by, was observed to walk forth and place himself at the mouth of the hive, and to catch the bees in their coming from and returning to the hive with much dexterity and activity. After witnessing the toad at work for some time and feeling convinced that, if his depredations were suffered, he would eventually destroy the whole hive, the owner of the bees killed the robber, and on inspecting his stomach, it was found full to repletion of dead bees.'—W. K. Suart.

[Reference to the indexes of previous volumes will establish the fact that toads are in the habit of eating bees.—Ed.]

SYRUP FILLED SECTIONS.

[564.]—Will any reader of *British Bee Journal* kindly inform me how judges know the difference between syrup-filled sections and those filled with pure honey? The other day I visited a country show where the sections which obtained the first award had every appearance of being filled with syrup, the surface of them being as white as snow, and the contents were leaking through the capings: and I think that if there is such adulteration honest people will stand no chance.—J. W. S.

QUIETING BEES (526) (544).

[565.] Having had a little experience of bees this summer in about eighteen variously constructed hives, I have only been stung once, and that was on the back of the hand. Gloves I never use; veil I do. A gentleman asked me to get him two hives, and give his gardener instructions how to put the bees into the box, which he

thought he had followed. When I examined them, I saw the skep on the frames, and the bees going in and out of the entrance; when I took the skep off, it was over the feed-hole, which he thought was for the bees to go through, and which of course they did; I took them out of the skep and put them into the frame which contained foundation and was not stung once. Another gentleman asked me if I would take the supers off his hives. When I came, the first order was, 'Remove cows out of field!' (about four acres). This his man accordingly did, and when I asked the reason, he told me, 'The bees were so spiteful, there was no getting near them.' Well, I went to work, took the supers off. In the midst of it, there was a voice from a hundred and fifty yards away, 'Would you like to have a cup of tea?' 'Thanks, very much; but come and have a look at the bees, they are very quiet.' No, not a single yard would she come. Well, I went through ten hives and finished as I begun without one sting: 'Surely you wash your hands in something,' was their remark.

Now, if 'True Blue' tries hemp carpet, or 'F. L.' throws aside brown paper, he will find his smoker more void of grease, and his smoker keep alight quite as well. It is very cheap. For persons about to begin, or have begun bee-farming, I should say for quieting bees use hemp carpet, and act gently and they will be gentle with you.—F. C. L., *South Devon.*

AN EXPERIMENTAL BEE RUN.

[566.] May I suggest to the B.B.K.A. the utility of an experimental bee-run to be enclosed by fine netting through which the enclosed bees could not penetrate? This run could be planted with various kinds of flowers in succession. The problems that would be solved would be,—

1. Amount of forage needed for bees.
2. Best flowers.
3. Whether the honey is secreted as soon as it is taken by the bees.
4. Quality of different honeys.

Pure rosemary, limnanthes, &c., honey could be thus obtained.—Edwd. Liddell.

HIVE CLASSES AT SHOWS.

[567.] I beg to thank Mr. Wren for his letter (No. 541) on judging hives, &c.

I was unable to visit the Colonial during the Bee Show, therefore I cannot make any comment on the hives exhibited there; but I was rather astonished at the kind of hives shown in the 10*s.* 6*d.* class at the show of the Berks Bee-keepers' Association yesterday; they were certainly 'marvels of cheapness,' and I was wondering how they were made for the money, when a gentleman who resides near Reading asked me if the hive which was awarded first prize was sold, if not, he wished to purchase it. He told me he bought the prize hive in the 15*s.* class at the Norwich Show, for which he paid 15*s.*, and that the two were exactly alike in every respect, and he stated that this was a 15*s.* hive entered in a 10*s.* 6*d.* class. If this is correct there is certainly room for improvement in the manner of judging. I think it would be a good plan to appoint a practical man to accompany the judges in the hive classes and give advice as to prime cost, then exhibits which are not priced at fairly remunerative rates could be passed over, as such are evidently only entered to gain honours, in order to mislead the readers of future catalogues.

There would be no difficulty in finding suitable men, some local carpenter or builder, or any man acquainted with the price of timber, would be all that is required; he ought not to be a hive maker and he need not be a bee-keeper.—H. Fewtrell, *Reading, August 27.*

HONEY AT THE EXHIBITION.

[568.] Soon after the Colonial Exhibition opened you had an article on the various honey exhibits from the Colonies. I was surprised at the time at not seeing any mention of an exhibit from South Australia, from Messrs. Coleman & May (whose name has appeared in your columns ere this), as I had had private advice that such had been sent forward. When at the Exhibition last week I made a point of looking for it, and after some time, in a case of food products, I found four cases which, I believe, contain the honey, but for some reason they merely stand there with the covers un-nailed, but none of the sections lifted out, and consequently none of their contents visible. It seems a pity that such should be the case, and that we cannot see and judge of the productions of the bee-farm of, I understand, about 200 or more colonies, in South Australia. Is it too late to have the exhibit altered in position? and how can it be done? I have written a note to the Commissioner for South Australia.—E. Alexander, *August 23.*

[Since writing the above Mr. Alexander has been informed by the Commissioner for South Australia that when the honey was first taken out of the cases it ran out of the combs, and it was therefore put back in the cases, and will now remain there.—Ed.]

BEES AND FLOWERS.

[569.] Your correspondent, Mr. Dobbie, in a previous number of your *Journal*, states that in some localities bees frequent flowers that they do not in others, and instanced *Limnanthes Douglasii* as a flower not frequented by them in his garden, and figwort as being infested by them. This seems curious, as the former has been believed to be a general favourite everywhere; but the remarks made by Mr. Dobbie appear to extend to other flowers also, as many correspondents praise the French honeysuckle as well as figwort (*Scrofularia nodosa*) as first-rate bee-plants, in consequence of which I took a great deal of trouble in getting the seeds and rearing them (a good deal of unnecessary trouble, I believe, especially the figwort, as it seems a hardy weed); but the result was most unsatisfactory, inasmuch as I never saw a single bee on either kind of flower; and in the case of the figwort, I hardly ever went near it that there were not two or three queen-wasps regaling themselves, so that, except to attract them for the purpose of slaughter, it seemed worse than useless, and I had it dug out. *Tarpeia*, which is a free-growing shrub with a small greenish bell blossom, and flowers about the end of May, is always crowded with bees; and *Veronica*, especially the pink-blossomed kind, is largely patronised in August. *Melilotus alba* also seems a great favourite, and bloomed with me from June to December, but its great fault is that it is a biennial, and only flowers for one season.—Boz.

A HONEY MARKET FOR IRELAND.

[570.] I see in the report of Mr. Stewart's paper on the Honey Market that a Mr. Gaggin remarked that 'they were trying to establish one in Ireland, but could not succeed owing to lack of funds.' I am very pleased to be able to inform Mr. Gaggin that we, the Irish Bee-keepers' Association, *have* started a honey market in Dublin, though at present it is exclusively for the use of our members.

I very much regret that I have not the pleasure of Mr. Gaggin's acquaintance. If he will communicate with me, or join our Association, I will furnish him with full particulars. I had no idea that there was a second party in Dublin working up a honey market. If such is the case, I should like very much to meet the promoters and compare notes. The prices we have

obtained for members as yet have varied from 8s. to 10s. nett per dozen sections, and I fully expect we shall be able to keep up that comparatively high price as honey goes nowadays. There are bright days, I believe, in store for Irish bee-keepers. We are not troubled by the religious and political strifes that are turning everything else upside down. The quality of our produce also will bear comparison with English honey, as was shown at the Colonial last month, where, out of five exhibits staged, we took a second prize for 1-lb. sections and two highly commended, and in the 1-lb. bottle class we had one highly commended. We can boast in one small item of being ahead of the British Association, in having induced the Government to include the statistics of Irish bee-keeping in the agricultural returns.—WALTER J. STANFORD, *Hon. Sec. I.B.K.A.*

PRICES OF HIVES EXHIBITED AT SHOWS.

[571.] I notice with some pleasure, and most fully endorse, the remarks made by Mr. L. Wren in a recent *Journal* on a subject that wants well ventilating in the *Bee Journal*. I am glad to find someone has at last had courage to open the ball on the matter.

My experience (which is not very limited) of shows quite coincides with Mr. Wren's as regards hives that are exhibited for competition at scheduled prices, it being perfectly evident that some so exhibited cannot be produced for the money. For instance, I happened to attend this season a show in the south of England, and spoke to the exhibitor of the first prize hive in company with another exhibitor, asking him how he made the hive for the money. The answer I received at once showed me the utter futility of attempting to gain honours by showing an article which could be produced at the price specified. Surely this is a matter that ought to be most carefully investigated, as it is manifest to all that it causes much dissatisfaction between manufacturer and customer, the latter expecting an article that cannot be produced for the sum specified.—E. C. WALTON, *Muskham, Newark.*

BORAGE *v.* RUE.

[572.] As a novice at bee-keeping, and gardener to boot, I have been much interested with the several lists of bee-plants given in your *Journal*. This one personal observation I have made from day to day,—Borage *versus* rue. Borage is reputed by so many bee-keepers to be of inestimable value. Rue is not recommended, which I don't at all wonder at if the honey partakes of its smell or taste, being somewhat hot and bitter. As I have to produce these, I have them growing side by side nearly. The rue is literally swarming with hive-bees, while the borage is scarcely visited. Do you consider it a good or bad flower for the flavouring of honey?—HORTUS.

[Have any of our readers had experience of honey gathered from rue? We do not see it noticed in Dobbie's *Bee Pasturage*.—ED.]

Foreign.

CANADA.

Linden bloom from reports constantly coming in, although a partial failure for some years throughout Canada, appears to have been this season a greater and and still more complete at the present.

The Canadian thistle blossom which follows has apparently a very fickle nature. In some localities the apiarist reports it never yields, in others it appears to supply the bee with nectar more or less abundantly. Certain it is that it is very susceptible to atmospheric influence. Favourable winds combined with a warm temperature and refreshing showers, and the flower is at its best as a honey-producer. The present season is too dry. The bees work upon it immediately after a shower and the freshly gathered nectar is so aromatic that the presence of very little can readily be detected as the extractor is doing its work. The odour is penetrating and fragrant. The nectar of a very fine quality, the flavour somewhat more decided than clover, colour beautiful and clear, and in texture a little less body than the best of linden. This honey promises to be scarce, but some localities are receiving a light surplus yield.

As to the price of honey, although there was a downward tendency for extracted when the first half of the season promised so well, prices are now firmer and will probably range about the same as last season. Comb honey first-class is firm at last season prices, and as in former years the supply will doubtless not be equal to the demand.

It would doubtless be an advantage for more bee-keepers to turn their attention to the production of comb honey. The Shuck hive which promises to be an excellent one, not only for the production of comb honey but extracted, if the reversible system will prove in practice what it does in theory, would, according to the claims of many, enable the apiarist to handle a great many colonies for comb honey. But it is undeniable that it requires more knowledge of the bee and its habits, a more minute knowledge of one's locality, and greater skill all around to produce comb than extracted honey, and it might be well for any one undertaking the change to do so cautiously and perhaps gradually.—R. F. HOLTERMANN, *Brantford, Canada, Aug.* 11.

The *Canadian Bee Journal* for July 21 alludes to the coffin-cases in which some honey was sent from Canada. It states that the honey was not sent by the Ontario Bee-keepers' Association. We are pleased to give this information; as we certainly have no wish to prejudice the Canadian bee-keepers in any way; and if they can supply us with honey at a lower price than we can produce it, they may be able to get rid of their surplus stock. But we do not think they will be able to drive English honey out of the market, as British bee-keepers can now put up honey in as nice and attractive a manner as any other country.

SWITZERLAND.

THE LATE A. MONA.

We are requested to state that the Brothers Cippa, of Bellinzona, have for some time been in partnership with the late Professor Mona, as raisers of Italian bees and queens, and that the latter only occupied himself with the management of the commercial part of the partnership. According to a deed dated 9th of March, 1886, in the event of the death of Professor Mona, the Brothers Cippa were to have the sole right of continuing the business. All orders should be addressed, Brothers Cippa, Bellinzona, Switzerland.

ITALY.

Italian apiculture has just suffered another serious loss in the death of Carlo Fumagalli, which took place at Lugano on the 24th of July last. The deceased bee-master was the author of the well-known hive bearing his familiar name, and although of late years replaced to a considerable extent by the 'Sartori' pattern, is still to be found in numerous apiaries all over Italy.

FRANCE.

The important question as to which is the best hive for the bee-keeper to adopt, and which is the most rational method of cultivation, is one which agitates French apiculturists not less than those on this side of the Channel, as may be gathered from a recent article contributed to the *Apiculteur* of Paris, by no less an authority

than Monsieur A. Vignole of which the following is an extract:—

'We have in this subject two great questions involved, questions which have seriously agitated the bee world for a number of years. The passionate discussions which have taken place upon this subject have created a confusion in people's minds that has not yet been dispelled. Let us therefore investigate the subject dispassionately so that we may arrive at a definite conclusion.

'A few years ago, say thirty or forty, bee-keeping was, notwithstanding the initiative of some individuals, a mere blind routine handed down to us by previous generations. There were, we must admit, a few exceptions in Normandy and the Gâtinais, who practised among themselves something of a semi-rational principle which they took good care not to divulge. Although the supering as practised in Normandy, and the nadiring used in the Gâtinais, could not be looked upon other than as a somewhat refined routine, yet they had the advantage of producing honey in a better form than could be shown by the rest of our national bee-keepers.

'Such an unsatisfactory state of affairs could not last long in these days of transformation. Apiculture, like her sister Agriculture, could not but follow the march of progress. Some investigators studied the habits of the bee, while others made them known to the world by means of books and periodicals.

'Like everything else, the beginning is always more or less involved in incorrect ideas and doubtful theories. Some followed one road of progress, some another, but at last every one arrived at the universal principle of the now common three rules, "Strong Stocks," "Large Hives," "Numerous Combs." Now, although we all agree upon the above principle, we are still divided as to how it should be put in practice. Some of us aver that the whole maxim lies in the direction of early artificial or scientific swarming. Some of us will use nothing but plain, uncomplicated hives, while others will have no connexion whatever with any receptacle for their bees, unless it be on the moveable-comb principle.

'Again, those using large frame-hives, such as the "Layens" patterns, for instance, are delighted with the almost complete suppression of swarming, and are, consequently, inclined to proclaim their superiority above all others, particularly in view of the fact that with these hives swarms cannot be artificially made without adopting special means requiring a certain amount of ability. On the other hand, those of us who use small hives with which swarming becomes an absolute necessity declare that they are in favour of allowing Nature to take her course.

'These are only a few of the numerous theories into which apiculture has become subdivided, and it would be unnecessary for the object of this article to examine them all *seriatim*.

'But, from the moment that we are all agreed that one of the indispensable conditions for successful bee-keeping is the presence of strong colonies, then it follows that nothing should be omitted by the bee-keeper that may tend to secure that result. Starting, therefore, from this point, it is clear that we must see that our hives are of sufficient capacity in the brood chamber to afford accommodation to the full extent of the requirements of a strong and prolific queen; at all events, this brood chamber should be capable of being adjusted to all necessities as they arise. This is a point of the utmost importance. Now, in a strong colony, as many as sixty thousand eggs in various stages of maturity may exist at any given time in summer, for which accommodation should be found, as well as for the simultaneous stores of honey and pollen required for such a large amount of brood. Nothing, therefore, short of a hive, the space of which can be contracted or expanded according to the exigencies of the case, should be adopted for apiculture on a large scale. Knowing, therefore, what the requirements are, it ought to be easy to decide upon a useful pattern for our hives, but before we enter further into this subject, it will, perhaps, be as well that we should give a retrospective glance upon the hives and methods adopted by our predecessors of (say) thirty or forty years ago. This will enable us to appreciate better the improvements and changes introduced since those days, and arrive at a correct estimate of the progress accomplished in our art.

'The bell-shaped hive used in our rural districts is undoubtedly the one which adapts itself best to the system of bee-keeping handed down to us by our ancestors. There is nothing more simple or more handy for receiving natural swarms; none demand less attention or present less difficulties. It certainly is the hive for natural swarming and for primitive methods of culture.

'And, moreover, let us admit it, in passing, that it is the most convenient receptacle for the bees themselves: it concentrates the heat best, and the exterior air, passing freely through its commodious entrance, keeps the combs in a condition of freshness and cleanliness that we would search in vain anywhere else; and, thanks to the absence of all internal grating-like impedimenta, the brood-nest is better developed and kept healthier than in more complicated hives, most of which have been invented to suit our convenience rather than the comfort and natural instinct of the bee. In winter, the cluster is of a more compact form, the distribution of heat more uniform, and in them bees are not, like in moveable comb hives, exposed to die of starvation near combs full of honey which they cannot reach in consequence of the cold. Yet, notwithstanding all these obvious advantages, this hive is now rejected by our modern apiculturists, because, being constructed of one single body, it does no longer suffice the exigencies of science, or satisfy the appetite of dealers.

'But if it cannot give us choice honey or honey-comb for the table; if it does not lend itself so readily as others do for uniting colonies, or to the giving of more room when required, yet the fact remains that it is a pattern of simplicity, and that it embodies merits which on our onward march of progress should never be lost sight of. Its roomy capacity, notwithstanding other drawbacks, is of itself an advantage that should be appreciated by all.

'Lombard tried to improve upon this hive by dividing it into two unequal bodies, the lower one, consisting of at least two-thirds of the whole, was intended as a brood-chamber and was crowned with a perforated wooden board through which the bees ascended into the upper or small chamber, which acted as a moveable super. By these means it became possible to obtain clear and brood-less honey-comb for the table, and was therefore, in this respect, a step in the direction of a simple yet useful improvement. But, as the hive now stood, consisting, as it were, of two chambers or bodies of different dimensions, it afforded as yet no improvement in the direction of giving facilities for extension or contraction; nor was it yet a convenient receptable for uniting colonies in cases of need; in fact, in this respect, it was no better adapted than when it consisted of one single piece.

'The Normandy hive, which was at that time the one most used in the Calvados district, where it is still to be found in great numbers, is simply a smaller model of Lombard's modified hive, its extreme exiguity being, however, a disadvantage.

'At that time, however, the value of comb and comb-foundation as an inducement for bees to work upon was not yet appreciated, so that, instead of providing the super or top chamber with combs, the bees were usually induced to enter it by means of a stick placed between the top, that is to say, the roof, and the top of the combs in the lower or brod chamber.

'Then Radouan, inspired with the ideas of Palteau and

others, brought to light a hive upon the so-called supering system. His hive was composed of three tiers of about twelve inches each diameter, forming in all a capacity of nearly forty-five litres, but which could, by means of progressive extensions, be increased up to sixty, or even seventy, at the time of the honey glut.

'But this arrangement did not, after all, permit the production of honey-comb for table use. The whole principle was one of partial harvesting, that is to say, that of taking right away one or more tiers with the whole of their contents whatever that might be; there was no attempt to minimise the swarming tendency of bees. The author's idea was of extending the capacity of his hive by the addition of nadirs as occasion required, and when the time for depriving his bees of their honey, the top box or tier was first of all detached from the lower ones by passing a thin knife or a wire across where they joined, and then removed with all its contents. As already stated, it was nothing more than the partial removal of a part of the stock hive itself. When this took place, the middle box or tier found itself on the top of the pile.'

(*To be continued.*)

Echoes from the Hives.

Great Ayton.—August 19, took twenty-three hives to the moors in a drizzling rain, with a very poor prospect; revisited them August 27 when I could hardly come near them, they have done wonders during their eight days' sojourn in Baisdale. No one need tell me that if bees are carefully handled they won't sting, for they will not let you go near them without a veil to handle them in any way.—John Dixon.

Haltwhistle, Northumberland.—We have had shocking weather the last month for our bees. Bee-keepers all complaining, but glad to say we have had a change for the last three days which the bees have made good use of. Heather is in full bloom in our locality, and is on an average good; so, with a fortnight of fine weather, we expect a fair amount of honey yet, but short of last year. I see in your valuable paper that there is a likelihood of an Association for Northumberland, and I wish it every success.—R. C.

Hexham.—After such an amount of discussion on queen introduction, permit me to give result of Mr. Simmins' method. I had a hive of Carniolans which were queenless, and with no possibility of raising one for nearly three weeks. I received a queen on the 4th of August, introduced same evening at 8.30 p.m., at top. Sixty hours afterwards I examined and found her laying. I never looked any more till the 28th, when I found it full of young bees and brood, eleven frames. They are now at the heather and doing well. As they are the first in this district they are being anxiously looked after. They are alongside of English, Ligurian, and hybrid bees on as nearly an equal base as possible for a trial. I shall let you know final results of season.—R. W. B.

Belfast, September 4.—I am sorry to say that this season has been a very poor one in the North of Ireland. Sections only partly filled and badly sealed, this is general report from all the bee-keepers I have met. September has been very fine.—Paul McHenry, *Hon. Sec. N.E.I. B.K.A.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

E. L.—*Two Swarms from one Hive.*—Two casts, or second swarms, frequently issue at one time, but first swarms would only do so if swarming had been delayed by the weather until one of the young queens had hatched out. In the absence of any signs of a swarm issuing from any of the surrounding hives, the probability is, that the hive did send out two swarms.

A. T. Adams.—Bees examined microscopically. The case is perfectly clear as bacillus alvei. It is useless trouble to send comb.—F. Cheshire.

R. W. E.—*Uniting Driven Bees to Stocks.*—If you have a preference for one of the queens remove the other, if not you may let them fight it out. Drive the stock, mix all the bees of both lots together and throw them on a board in front of the hive as you suggest.

West Cornwall.—1. *Queens from Condemned Bees.*—They can be kept for a week in cages with a few attendants, giving a few drops of honey every day. If with a small piece of stored comb they may be kept for three or four weeks, but long confinement is injurious. You could not keep them through the winter. 2. *Uniting in Bar Frame-hives.*—The less disturbance the better. Open the hive which is to receive the other bees. Separate the combs widely enough to receive the others between them. Open the other hive with as little disturbance as possible, lift out the combs and gently place them between the others and close up. Use no scent, and as little smoke as possible. 3. *Carniolans.*—These are not very readily distinguished from blacks at first sight. They are pale in colour, the whitish bands giving them a grey appearance. They are very mild in temper, and prone to swarm. They cannot work on red clover.

A. K. B.—*Cover for Hive.*—The wooden cover as described in No. 2 of your letter would seem to be the best. A low shed is very awkward for manipulation.

Trevor Saynor.—The cloth is suitable for spring and summer covering; but it is at present a moot point whether an air-proof cover or one allowing upward ventilation should be used in winter. If you use it, cover up with plenty of woollen material, or else the moisture of the hive will condense upon it and return in drops on to the bees and render them damp and unhealthy.

Beeswing.—*Tiering up Sections.*—The bars on which the sections stand should be a quarter-inch thick, so as to allow a bee-space under the sections. The upper tier should have also a quarter-inch space between the tops of the lower tier and their bottoms.

East Dulwich.—Stands of hives should be low, about five inches from the ground, with sloping alighting-board. Without this in the spring a great many bees returning loaded are blown by adverse winds under the hives, and are frequently unable to rise again.

E. P.—*Foul Brood.*—The honey from the infected combs may be boiled for a short time, and by the addition of salicylic acid can be used as food for bees. The means you have taken will, we hope, prevent the recurrence of the disease. The first visible signs of foul brood are the caps of the sealed brood indented and pierced, the cells contain a sticky, coffee-coloured substance, and a most disagreeable stench is emitted.

A Tyro.—The price quoted by you for sections is very low; but whether it would pay you to produce them in preference to run honey can only be determined by your own experience.

Old Times.—You will find in our number for August 26th an exhaustive article on the treatment of condemned bees, in which you will find replies to your questions. For the best feeder and the most practical hive we must refer you to our advertising columns, as for obvious reasons it is not desirable for us to mention our preferences. A good guide in these matters is to note the prizes which the respective exhibitors have gained at the shows recently held in the metropolis and the provinces. It is better to keep bees in the open than in an attic.

An Amateur.—Please consult our advertising columns for prices of extractors. It only becomes us generally to state that the Little Wonder Extractors are serviceable for small apiaries, and those on the Cowan principle for larger.

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Editorial, Notices, &c.

CANADIAN HONEY.

From the following communication from Mr. J. M. Hooker, it would appear that the freight of Canadian honey, which we have been looking forward to with so much expectancy for many weeks, has at last reached the Indian and Colonial Exhibition. It is a grand display of the honey-producing powers of the Canadian Dominion. It consists of forty tons of honey, chiefly of white clover. As the British bee-keepers acquired much knowledge as to marketing honey from the consignment of American honey that was exhibited at the Kilburn Show, it is quite possible that much addition to their experience may also be derived from the present magnificent display. It will be found in the Colonial Provisions Market on the left of the Indian Court, as one enters from the Subway. We hope all British bee-keepers will take an opportunity of visiting this exhibit, and that some means will be devised by the Committee of the British Bee-keepers' Association of bringing together in union and confraternity Canadian and British bee-keepers.

'About *forty tons* of Canadian honey have arrived at the Exhibition and are now being unpacked and will be all in order by the end of this week.

'There are four gentlemen who are delegated by the Ontario Bee-keepers' Association to see to the whole thing, and right well they appear to be doing it. Our old friend Mr. D. A. Jones, of Beeton, is one, Mr. Corniell of Lindsay, Mr. McKnight, of Owensound, and Mr. Pettit, Belmont. By accident I met Mr. Jones, who introduced me to the others; they represent different parts of Ontario, living over a hundred miles one from the other. I spent part of last Thursday afternoon with them, seeing them unpack some of the comb honey, which you will be pleased to hear has come with few breakages. There are fifteen tons of comb honey of very good quality, principally clover honey; the packing was very cleverly done, and has well repaid them for the great care and skill bestowed upon it by the result. They were most courteous to me and gave me every information and look forward to making the acquaintance of some of our fraternity. All bee-keepers should make a point of seeing this grand exhibit.—JOHN M. HOOKER.'

WASPS.

It may be in the recollection of our readers that in the early part of the season we drew their attention to the redundancy of queen-wasps, and we desired them, as a phase of natural history, to note if at the end of the season the wasps were to be found in an undue proportion. We then hazarded a conjecture, arguing from previous analogous instances, that they would not be found to be abnormally numerous, as we considered it possible that, though they were queen-wasps, they might not be wasp-mothers. We believe that there is a probability that our conjecture will be borne out, and in support of it we append a note which appeared in the *Daily News*, September 14:—

'WASPS.—"J. C.," writing from Holbeach, Lincolnshire, asks:—"What has become of the wasps this year? Previous years these pests have been most numerous, destructive to fruit, and a nuisance generally; but this year, at least in this part of the country, they are conspicuous by their absence."'

A VISIT TO MR. BLOW'S BEE GARDEN.

There is a charm about the very name of Welwyn—when you know how to pronounce it; not Wel-wyn but Wellin, rhyming with 'Ellen.' I was on my way thither elate with the prospect of seeing Mr. Blow and his bees, and charged with the importance of bearing an order (the materials for a small bee-farm) for the colony of Natal.

The weather was fine as could be, sunny and hot, without being sultry, and the change from the wooden box of the South Eastern Railway to the airy, well-carpeted, and upholstered carriage of the Great Northern Railway seemed to improve things all round, weather included. As we rushed through the short tunnels the electric light beamed forth vieing with the sunshine outside.

We soon reached Hatfield and changed for the Luton branch, to catch a more convenient train to Ayot. Alighting there, I found I was 1½ miles from my destination, and seeing a cart freighted with children, bound for the village, I asked permission to mount, and we were soon wheeling away through the leafy arcades; my Jehu descanting meanwhile on the virtues of the black mare between the shafts.

'There ain't a better mare in the kingdom for night work, and she dun-no how to shy' (she discovered the method in the course of the next hundred yards).

'A pretty country this,' I remarked.

'Yes; the country's pretty enough, but these 'ills is killing for 'osses.'

'Just so, I'll get out here, please; that path appears to lead to the village.'

'Yes, sir; and look out for the Viaduct on the right; it's as fine a one as ever you see.'

Welwyn lay at the bottom of the hill half a mile away, buried in trees; and on the opposite side of the slope, here and there a house looked across the valley; spanning which, some distance on the right, was the Viaduct. There were some men down the field loading a wagon with wheat. I could hear the thrust of the pitchfork and the rustling fall of the shocks on the wagon, and the regular 'gee whut' of the boy with the horses, but there were no other sounds: a quiet little place is Welwyn.

I found Mr. Blow in his shirt-sleeves, 'I am all in a muddle to-day, my head man is down at Reading' (it was the day after the show), 'and my clerk is on his holiday. I didn't get home from Reading myself till twelve o'clock last night, but I took several prizes.' We discussed my order and our luncheon together, and then we went over the works. Who would have thought a few years ago that the requirements of British bee-keeping would have necessitated such a factory as Mr. Blow's? Unfortunately, the machinery was not running; but I had a good look at it, and I was pleased to note it was all, excepting some special circular saws, 'home-made'—I mean *English*.

There was an eight-horse-power (nominal) engine—the sinews of the factory—to run the following:—A heavy iron section-making machine; 'The only one,' said Mr. Blow, 'in the country,' now out of use on account of the low price of American sections—that terrible foreigner again. The year before last it turned out the enormous quantity of 10,000 sections per day, they were made from imported bass-wood, our English woods not being suitable for the purpose. The machine is now converted into a panel-planer capable of planing planks twenty-six inches wide.

Next there was a neat little planer for hive work, and then an iron saw table with various kinds of fittings to enable the operator to do 'almost anything' with it.

Next came a combination saw-table and surface planer, all of iron; and, lastly (a figure of speech, because I saw more things than I can describe), a most ingenious machine for sharpening the long knives of the planers; the knife has to be screwed to the machine, which is then set in motion, and when the knife is properly ground it stops automatically 'done to a T.'

Proceeding upstairs, where all the wood is cut into lengths, I saw a cleverly devised swinging cross-cut saw, hung like a pendulum, which has to be pulled over the stuff by the workman while revolving. Adjoining, on the same floor, are the wax and foundation rooms, where were four foundation machines of different patterns. Here was wax from Italy, Zanzibar, Madagascar, &c., which kinds, Mr. Blow explained, have to be judiciously blended to get the right degree of *toughness* rather than beauty of colour; Italian wax being very pretty but very soft.

We next came to a room where a boy was trimming up a pile of metal ends cast the day before. I noticed that the intelligent-looking workmen in the various departments were evidently learned in the 'education of the hand.' I paid a visit to the tin-workers' shop, where extractors, smokers, &c., were made; and thence to the stores, where I saw rolls of Dutch carpet, cases of sections, crates of feeding-bottles—in fact, there were so many things to see I began to get a bit bewildered, when Mr. Blow said, 'Now we'll go and see the bees.' That was the consummation of my wishes. We turned into a wicket-gate near the quaint old church, built in three different styles, and there were the bees. I must say the bee-garden is a much pleasanter place than is conveyed in the No. I picture of Mr. Blow's catalogue, although not suffering from such a plethora of hives. It is a large enclosure containing a bright green lawn, divided by a path, and skirted by another, on either side of which, and all round the lawn, are placed the hives, painted alternately dark green and chocolate. In the background, opposite the entrance, is a shady wood with laurels and evergreen shrubs, and a tangled scrub of undergrowth. All round the place were stately trees. The flower-borders upon which the hives were set presented a golden blaze of marigolds, planted more for scenic effect than bee-forage; here and there a sunflower (not unlike a giant marigold) lifted its tall head, and in one corner a fine crop of Canada balsams alive with honey-getters.

Through the trees, just across the river, is an old house, formerly the residence of the poet Young, who was rector of Welwyn. Here he wrote his celebrated, though rather melancholy, *Night Thoughts*. The splendid avenue of limes just ahead was planted to his memory by Mr. John Knight, a later rector, and a monument hard by records in choice Latin the above fact. In Young's time Welwyn was celebrated as a watering-place, a mineral spring of some value rising here. Young had a large assembly-room built near the old rectory, to accommodate the beauty and fashion of that day who came to drink the waters.

Then the bees. There were Carniolans, Italians, Cyprians, and blacks. 'Which do you think are the best bees, Mr. Blow?' '*Carniolans*.' 'What, as honey-gatherers?' 'Yes; for all purposes.' This agrees with Mr. Simmins' remark, 'Carniolans and Cyprians are the bees of the future.' 'Aren't Cyprians spiteful?' 'Very, when they get old; they are then perfectly unmanageable, and have other bad characteristics, such as often killing off queens, getting fertile workers, and as robbers are perfect demons.'* 'How many stocks have you got here?' 'Eighty.' 'But haven't you stretched it a bit on your picture?' 'Oh, there were a great many more then, but I have had some heavy sales of bees this summer: one sale being of 120 stocks.' 'Don't you think if your hives were painted *white* they would be more comfortable for the bees this hot weather?' 'I had them white once, but the lady living there'—pointing through an opening in the trees—'complained that they looked like a cemetery.' What a perverse simile! The bees were flying very freely, but they were as 'gentle as flies.' Robbing was going on vigorously on a queenless hive, but Mr. B. made short work of it by shutting up the hive and watering (?) the alighting-board with paraffin. 'I shall open them in the evening, when the robbers will go home, and to-morrow I shall unite with another stock.' There were several colonies of Carniolans, but I could not help lingering round one magnificent stock. There was a cloud of bees round the entrance, large, silvery, handsome bees; and they looked (I don't think it was fancy) much more beautiful than some other stocks of Carniolans in the same garden, probably the progeny of a choice queen—'taking after their mother.'

But time was flying as well as the bees, and I reluctantly took my departure. I got a ride to the station (Welwyn station this time), about the same distance from the village as Ayot, the road running alongside of the river Mimram, a tributary of the Lea, where there are plenty of (well-preserved) trout. The evening prospect

* Since the above was written I have seen Mr. Simmins, and his opinion does not coincide with Mr. Blow's. He took me to a hive of Cyprians (old ones and queenless, having divided a stock some weeks since to save the drones for late breeding purposes), gently peeled off the quilt, separated the frames, took one out of middle of hive and shook the bees off, rearranged the frames, shook the stragglers off the quilt, and covered up, all *without smoke* (note that condition), and they took all this *as gently as it was done*.

was as picturesque as the morning, and I took leave of Mr. Blow, Welwyn, and the bees, having spent a most delightful day. If any of your readers feel inclined to spend another, I venture to say Mr. Blow will be very glad to see them.—W. Hollier, *Dorking.*

ASSOCIATIONS.

GLASGOW NORTHERN DISTRICT HORTICULTURAL SOCIETY.

The annual show of flowers, vegetables, &c., was held on Friday, September 3rd, in Hyde Park Hall, Springburn, and was the finest ever yet held by the above Society. A new feature in connexion with the show was the beautiful display of honey-comb from the apiaries of Mr. William McNally, Glenluce, Scotland, and exhibited by Mr. John D. McNally, 10 Hillside Street, Springburn. The collection consisted of well-filled supers, sections, jars, &c., and a scroll built by the bees, 'Scotia,' which has won many prizes at shows during the present year. The judges awarded Mr. McNally a special prize of merit for his display, and expressed their hope that next season a few prizes would be given for the encouragement of this now important industry, bee-keeping.

DUMFRIES SHOW, 1886.

We gave an account of the show in our number for Aug. 12th, p. 376. We now append the list of awards:—

Bees.—British bees: 1, R. McNally, Glenluce; 2, James Johnstone, Stirling. Cyprian, Ligurian, or any other foreign bees: R. McNally.

Hives.—Hive for observation purposes: 1, and Highland and Agricultural Society's Silver Medal, R. McNally. Inventions or improvements in hives and appliances: W. and R. McNally (equal). Straw hives and supers of any description: 1, R. McNally; 2, W. McNally; 3, J. D. McNally, Glasgow.

Comb Foundation.—10 sheets of comb-foundation made of pure beeswax; worker-cell for stock-hive; and 10 sheets thin for supers: 1, W. Young, Perth; 2, R. McNally; 3, John McNally. Two cakes of wax, weighing not less than 4 lbs.: 1, W. Templeton, Dumfries; 2, J. Smith, Dumfries; 3, R. Steel.

Honey.—Display of honey and honey-comb: 1, and Highland and Agricultural Society's Silver Medal: 1, W. McNally; 2, R. McNally; 3, S. Roebuck, Dumfries. Two supers above 20 lbs; 1, J. Townsley, Dumfries; 2, R. Anderson, Stevenston; 3, J. Anderson, Dalry. Super above 12 lbs. and under 20 lbs.; 1, J. Smith, Dumfries; 2, Annie Anderson, Dalry; 3, James Anderson, Dalry. Super of honey, not being sectional supers; the super to be of wood, straw, or of wood in combination with glass or straw: 1, W. McNally; 2, W. Templeton; 3, J. Briggs, Laurieknowe, Maxwelltown. Twelve 6-lb. sections of comb-honey: R. McNally. Twenty-four 1-lb. sections of comb-honey: 1, S. Roebuck, Dumfries; 2, J. Townsley; 3, Rev. F. Taylor, Cumberland. Twelve 2-lb. sections of comb-honey: 1 (no name); 2, W. H. McDowall, Kirkcowan; 3, Rev. F. Taylor. Twelve 1-lb. sections of comb-honey; 1, S. Roebuck, Dumfries; 2, Rev. F. Taylor; 3, W. H. McDowall. Run or extracted, in twelve 1-lb. glass jars; 1, S. Roebuck; 2, J. Templeton; R. McNally. Heather honey, in comb or otherwise; 1 and 2, E. McNally, Rutherglen; 3, R. McNally. Best design in pure honey-comb, worked by bees: 1, W. McNally; 2, R. McNally.

Special Prizes for Ladies.—Super above 10 lbs. and under 20 lbs.; Mrs. S. Roebuck; 2, Miss Fraser; 3, Mrs. R. McNally. Glass super of honey-comb; 1, Miss Anderson, Stevenston; 2, Miss Templeton. Twelve 2-lb. sections of honey-comb: Mr. S. Roebuck. Run or extracted honey in glass jars, not less than 12 lbs.; 1, Mrs. Townsley, Dumfries; 2, Mrs. E. McNally; 3, Mrs. Roebuck.

Comestibles.—Liqueur or wine made from honey; R. McNally. Cake made with honey: 1, R. McNally; 2, J. D. McNally, Glasgow; 3, E. McNally. Collection of different things made from honey as food and liqueurs: R. McNally.

Miscellaneous.—Collection of hives, bee-furniture, bee-gear, for general use; 1, W. McNally; 2, R. Steel. Honey extractor: 1 and 3, W. Young, Perth; 2, W. McNally. Extractor, or press, for heather honey; 2, McNally (one entry). Best and most interesting collection of natural objects, models, or diagrams, connected with apiculture, and illustrating the natural history and economy of the honey-bee: 1 and 2, E. McNally. Best and largest display of honey-producing plants, stating particulrrs caleulated to be of interest to bee-keepers: 1, E. McNally; 2, H. Dobbie, Norwich; 3, Miss Nicholson, Glenluce.

Special Prizes.—Model apiary—Lanarkshire hive (given by Mr. W. McNally): E. McNally. Bar-frame hive (by Mr. Ebenezer McNally, Rutherglen): R. McNally. Straw hive, stocked with bees: 1, 2, and 3, James Johnstone, Stirling.

WIGTOWNSHIRE APIARIAN ASSOCIATION.

The fourth annual show of the above Association was held on Friday, September 3rd, in a tent on Academy Grounds, Stranraw. The show of honey, considering the season, was excellent, and quite equal to that of former years. Mr. William McNally, Glenluce, and the Rev. J. B. Robertson, Leswalt, who were on former occasions large prize-winners, did not compete on this occasion, having to take the position of judges. Mr. William McNally had on exhibition, however, a large collection of modern appliances used in connexion with the production of honey; the quality of the workmanship, as well as ingenuity displayed in the design of many of these articles, is beyond all praise. Mr. Ross, of the Reformatory, had also a very fine collection of these appliances, made by the boys in the Reformatory, as well as material in all different stages of its manufacture. Mr. John D. McNally, Springburn, Glasgow, offered four special prizes (open to all comers)—two handsome silver medals, a walnut inkstand, and a book on Bees—for the following: 1, Best two Observatory hives; 2, Best honey-press; 3, Best design in honey-comb; 4, Best collection of bee-flowers. The judges were Mr. William McNally, Glenluce, Mr. McMeeking, Logan, and the Rev. J. B. Robertson, Leswalt. The awards, which gave every satisfaction, were as follows:—

Class 1.—1, James Fleming, Castlekennedy. Class 2.—1, J. Fleming; 2, W. Carson, senr., Glenluce. Class 3.—1, J. Fleming; 2, J. Muir, Castlekennedy; 3, J. McDowall, Lochans. Class 4.—1, J. Galloway, Garvilland, Glenluce; 2, J. Muir; 3, W. H. McDowall, Kirkcowan. Class 5.—J. McDowall; 2, J. Galloway; 3, J. Fleming. Class 7.—W. H. McDowall; 2, J. Fleming. Class 8.—1, J. Muir; 2, W. H. McDowall. Class 9.—1, J. McDowall; 2, J. Galloway; 3, J. Fleming. Class 10.—1 and 2, J. McDowall; 3, J. Fleming. Class 11.—1, W. H. McDowall. Class 12.—1, J. Fleming; 2, J. Galloway; 3, W. H. McDowall. Class 13.—1, Mrs. Priestly, Castlekennedy. Class 14.—Special (open to all comers).—Best two Observatory hives: 1 and medal, William McNally, Glenluce. Class 15.—Best honey-press, invention of the exhibitor: 1 and 2, William McNally, Glenluce. Class 16.—Design in pure honey-comb (J. D. McN.), or any other letters, produce of 1886: 1, William McNally, Glenluce; design, 'Scotia.' Class 18.—Best collection of bee-flowers: 1, Miss Nicholson, Glenluce. Class 19.—For the best hive: 1 and 2, William McNally, Glenluce; 3, S. Stewart, Lochrans.

RUTHERGLEN FLOWER SHOW AND HONEY EXHIBITION.

Last Friday the great floral fête of the season in our ancient burgh took place in the Town Hall Buildings, which was in every sense a most successful event. The competition and exhibition of flowers, fruits, vegetables, honey, &c., are conducted under the auspices of the Rutherglen Horticultural and Apiarian Society, of which Mr. E. M'Nally acts as hon. secretary, and under his

care and supervision the main work is carried on by an efficient staff of directors.

The Apiarian Department excited great interest, and during the exhibition large crowds visited the Lesser Town Hall, in which were staged all the appliances connected with the apiary. The display was attractive, and the quantity as well as the quality compared favourably with any former event. Mr. E. M'Nally of course carried all the honours of any distinction. His exhibits of articles manufactured with honey were specially commended by the judges, and deemed worthy of a special prize from the Society. Several of the diagrams were shown which secured the silver medal at Dumfries Show this year, and were greatly admired. Mr. Richard M'Nally, of Glenluce, staged abont 400 lbs. of heather and clover honey, and these exhibits added very much to the interest of the department, and for which the judges also recommended a special silver medal. One of the features this year in the honey sections was the competition in cakes baked with honey. Mr. George M'Nally took first prize with a cake baked by Mr. John Miller, baker, Glenluce. It is worthy of note to state that Mr. Miller's cakes secured the second prize last year at Aberdeen, and first this year at Dumfries in a competition in which some of the leading pastry bakers of Glasgow took part. Among the natural history objects was a very fine specimen of the hornets' nest, which has just been presented to the Kelvingrove museum by Mr. E. M'Nally.

Open to the District of Rutherglen.—Largest display of honey and honeycomb—E. M'Nally. Observatory hive stocked with bees—E. M'Nally. Collection of bee appliances adapted for amateur bee-keeping—E. M'Nally. Collection of models, diagrams, flowers, &c., illustrating the natural history of the bees—E. M'Nally. Collection of wax and comb foundation—E. M'Nally.

Open.—Eleven 1-lb. jars heather honey—E. M'Nally. Exhibit of goods manufactured with pure British honey—E. M'Nally.

Extra Prizes. — Most successful exhibitor in honey classes who has never shown out of Rutherglen — R. M'Alpine. Best super of honey, either wood or straw—R. M'Alpine. Six 1-lb. sections honey—R. M'Alpine. Six 1-lb. jars run honey—1, R. M'Alpine; 2, R. Fleming. Super honey, under 10 lb.—1, R. M'Alpine; 2, R. Fleming. Best cake baked with honey—1, G. M'Nally; 2, E. M'Nally; 3, J. M'Nally.

SELKIRK FLOWER, VEGETABLE, AND HONEY SHOW.

The annual exhibition in connexion with Selkirk Horticultural Association was held in the Volunteer Hall on Saturday. The first exhibition of the Forest Apiarian Society was held in connexion with the show, and for a first exhibition was highly creditable to the members, considering the short time the Society has been in existence, having been formed only a few weeks ago. The exhibits numbered eighteen, and there were some very fine sections of both flower and heather-honey. For the best heather-honey a silver medal was sent from Mr. Eben. McNally, a bee-keeper in Rutherglen. The strongest competition was for extracted honey, there being no less than sixty-two jars staged. Special notice was taken of a very fine 'Stewarton' eke, and a large section was on exhibition, which was shown by Mr. Pringle, Cockburnspath—the judge, who gave the opinion that for a first exhibition this was highly creditable to the Society. The first-prize takers in the honey section were—best eke, John Anderson, Elm Row; best six sections, flower, Mrs. Anderson, Hawthornbank; best six jars, John Dobson, Elm Row; best six sections, heather (medal), Andrew Smith, Forest Terrace; largest exhibition, James Kemp. At the close of the exhibition a considerable quantity of honey, of which over 200 lbs. were shown, was sold at from 1*s.* 3*d.* to 1*s.* 6*d.* per lb.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PRICES OF HIVES AT SHOWS, &c.

[573.] In reply to a 'Veteran Bee-keeper,' if he desires his remarks to have weight, he should sign his name, as we have many V.B.K.'s who have never seen the inside of a bar-frame hive. I am quite willing to admit there are 'gentlemen who are better bee-keepers after two years' experience than many who call themselves practical bee-keepers after many years of bee-keeping,' but their knowledge of hive construction will be very limited, and any novelty would be likely to make an impression. At the show to which I referred, there was an experienced judge, (?) but the less said on that point the better.

Relative to the hive referred to at the Colonial, a member of the Committee of the B.B.K.A. first drew my attention to it before the awards were known, and another member of the B.B.K.A. said he should claim the hive for 20*s.* if it were noticed, therefore I was not alone in my opinion.

I can afford to laugh at 'V.B.K.'s' sneer about a disappointed exhibitor; I have enjoyed in the past a fair share of those honours, and was well known as a successful exhibitor to the esteemed late H. R. Peel before he entered upon his noble and successful work connected with the B.B.K.A., and some gentlemen whose names are now a tower of strength to the Society will remember their visits when one side of my office was covered with prize cards, the larger number of which were for first prizes or silver cups; but I resolved not to exhibit bee-keeping appliances except it was something new that I thought would be of service to bee-keepers generally.

Having acted as hon. secretary for ten years to a show where the entries averaged about 500, I am not a stranger to the duties and difficulties of the judges. I also beg to inform 'V.B.K.' that a committee have no power to withhold a prize awarded by the judges; this has been tried in a court of law, and the committee lost the case. 'V.B.K.' has misconstrued my letter; no one can read it and say that I disputed the right of Mr. Flooker to the bronze medal; I considered the idea a good one, but the machine was by no means perfect or complete.

While 'V. B. K.' thinks I deserve a severe castigation from the editor, *successful exhibitors* have written thanking me for throwing some light upon the subject, and have opened my eyes still more with the contents of their letters. I cannot vouch for the truth or otherwise of their remarks, but will give some quotations. One writes: 'I exhibited at one show and did nothing; I sent the same articles to another exhibition the following week, against the same competitors, and was very successful. Both judges were sent by the B.B.K.A.' Again: 'I exhibited a hive in the 25*s.* class at —— show and gained second prize; the following week the same hive appeared in a 15*s.* class by mistake, and the same judge (from B.B.K.A.) passed it without notice.' Another remarks: 'The uncapping machine was removed from the Colonial Show some days before the exhibition closed,

which was a violation of the regulations.' I am not responsible for the above statements, but I leave 'V. B. K.' to read, mark, and learn; I shall take no further notice of his letters without he signs his name.

I am pleased that Messrs. Fewtrell and Walton have shown sufficient courage to give their experience upon the matter. I know there is a strong under-current of dissatisfaction upon the matter.

In reply to the Rev. J. Lingen Seager, I beg to inform him that I have every advantage in production, close proximity to good timber-yards, saw-bench, gas-engine, &c., fitted up expressly for the work, which I personally superintend, and my calculations are based on cutting out and making up a quantity of one size at the same time, and the correctness of my calculations are confirmed by some of the largest manufacturers in England. Amateurs' calculations are not be relied upon; often very little is allowed for time, and nothing for rent, &c. A manufacturer must take into consideration the interest on capital invested on plant and stock, also rent, rates, wages, &c.; and amateur making two or three hives a-year has no basis on which he can rely for a correct and safe calculation.—L. Wren, *Lowestoft*.

SHOWS IN GENERAL AND THE COLONIAL IN PARTICULAR.

[574.] I had hoped for the sake of the B.B.K.A., that Mr. Wren's letter and the judging at the Colonial would have passed unnoticed, but 'A Veteran Bee-keeper,' who is evidently one in authority, having taken up the cudgels, I feel free also to have my say on the question, whereas otherwise I should have kept silent.

'A Veteran Bee-keeper' has treated Mr. Wren in a most unwarrantable manner. He is a thorough practical and enthusiastic bee-keeper, a great friend to the affiliated Associations; and he also knows something of organizing successful bee-shows, and probably is as well versed in the procedure of judges at bee-shows as his censor; and although not so widely known as some of our judges, is equally as competent to form an opinion on hives and appliances.

Mr. Burkitt's letter (548), on page 412, will give readers of the *Journal* some insight of what was a grave scandal at the Colonial while the show was on with respect to Class I. The first prize hive, Class VIII., is another matter that neither Mr. Burkitt nor Mr. Wren has mentioned. Will 'A Veteran Bee-keeper' support the judges in making that award? or will he supply them with a carpenter's rule when next they undertake judicial duties?

Mr. Wren is not 'unjust' in his remarks about section crates. What will be necessary to remove some of them from hives when propolised, we will waive for the present; but he only speaks the truth when he says some of them that had been awarded honours could not be taken to pieces without a screw-driver or some means of leverage; and also he is correct when he speaks about five-eighth bee-space: these things were discussed by myself as one of a group of practical bee-keepers. I was nor am in any way interested in a single appliance in the show except as a purchaser or one desirous of learning the merits of the last new thing. What is more I never exhibited an appliance in my life, consequently 'A Veteran's' slur about 'disappointed exhibitors' happily does not touch me; but I do claim to yield to none in my desire for the success of practical bee-keeping and the B.B.K.A.

In my criticisms elsewhere, under a *nom de plume*, I have given my thoughts of what was in its conception and accomplishment as far as the management was concerned a very grand show; but we shall always have these anomalies, and consequent grumbling, so long as the judges at the great shows are exclusively selected from the class of 'gentlemen of education and ability who have become better bee-keepers in two years than many who call themselves practical bee-keepers after many years of practical bee-keeping,' to quote the words of 'A Veteran;' and for this simple reason, these gentlemen keep bees in a great measure by deputy. Bee-keeping differs materially from dogs, stock, poultry, or gardening; it is one thing to fly out of the garden while 'your man' finishes a difficult job amongst the bees, it is another to do it oneself; and it is the difficulties that teach one the superiority of appliances, just as an accident often teaches one more than many years of elaborate experiment. The judges, I am aware, make large sacrifices in the interest of bee-keeping; and I have the happiness of numbering many of them amongst my friends: but if they and 'A Veteran' are under the delusion that their awards invariably give satisfaction to non-exhibitors it is time they should be undeceived. I shall depart from my usual custom and append my name to this, as this is a question not to be fought behind a bush, and I would advise 'A Veteran Bee-keeper' to follow my example if he has anything farther to say on the subject.—J. P. Sambels, *Cole Green, Hertford*.

[Is not our friend a little hard on the judges, and would he not be a little more lenient if he knew that at the largest show ever held by the B.B.K.A., there were only six judges appointed, two of whom were from various causes unable to attend? The remaining four had more work imposed upon them than ever fell to the lot of judges at any previous show, and it took them two whole days, with scarcely a moment for refreshment or rest, to get through their work. We know that it took five hours to decide on the awards in Class VIII., and we do not think our esteemed correspondent will say that the gentlemen appointed by the B.B.K.A. at this show were either novices or inexperienced, whatever may be said of judges at local shows. We have already criticised the hives, at page 351, in our report of the show, and have there pointed out what we considered their defects. We heartily sympathise with the judges at shows generally, and, as our correspondent points out, they do 'make large sacrifices in the interest of bee-keeping.' There is always a great difficulty in getting judges for shows, more especially as they know that their awards do not invariably give satisfaction.

There are gentlemen who work amongst their bees themselves and make all their hives and appliances. It is amongst them that judges should be selected as far as possible; or we may witness scandals such as were recently reported in a contemporary. *Tot homines, quot sententiæ.* We therefore do not view the awards in Class I. as a scandal, and do not see how the judges could have acted differently, as Mr. Jenyns, on p. 419, last week, points out; and had they done so, nearly all the exhibits would have been disqualified, if not all of them, and the finest collection of honey in the whole show would have remained unnoticed. To have refused to award the prizes would, we think, have been very unfair, considering that this class was one of the principal features of the show, and the exhibits were brought together at a great cost to the Counties. We hope when the judges have made their report on the show to be able to publish it.—Ed.]

MR. HEWITT AND SIMMINS' DRY FEEDING SYSTEM.

[575.] In the *Journal of Horticulture* of August 19th, p. 170, 'A Hallamshire Bee-keeper' (otherwise Mr. John Hewitt) makes the following strange statement:—

'Feeding bees on dry sugar alone as as a practical thing was my idea, and I made a big fight for it in the *British Bee Journal*, and no one tried to "sit" on the idea more than Messrs. Abbott and Simmins; and yet within six months the latter claimed all the credit, and said he had been working at the problem for years, though his own published letter, not six months before, entirely repudiated the theory. In fact it was entirely owing to his scouting the idea of bees being able to con-

sume dry sugar that I came out in its defence, and told what I knew. But Mr. Simmins began to make a trade of it, and advertised his "dry sugar feeders," and when I wrote to the *B.B.J.* pointing out his inconsistency, I was quietly dropped, and he was allowed to figure as the man.'

Mr. Hewitt conveniently forgets that no letter of his in defence of his theory appeared in the *British Bee Journal* after my own condemning the same was inserted; but, to say the least, the claim put forth is peculiar and contradictory, and there will be no difficulty in showing that not only is he entirely in the wrong, but that he has not even introduced a practical idea in regard to feeding bees. Your readers, like myself, will be surprised to hear that Mr. H. can lay claim to having originated the present system of feeding dry sugar to bees, which embodies the principle of giving uncooked loose sugar in specially-prepared feeders, which alone are adapted to the purpose.

My own system was introduced as the result of practice, and is suitable only for stimulation and storing during such times as it is desirable so to do. I wish it to be distinctly understood that I have on no occasion advised my plan for winter feeding, neither do I recommend feeding in winter in any way, believing it, as proved by my own experience, always possible to store bees properly before that season arrives. Yet it so happens that all Mr. Hewitt can lay claim to is that in the autumn of 1883 he advanced the long-since exploded theory that 'bees could *exist during winter* upon *dry combs* (devoid of liquid stores) and one (or more) dry slab of candy,' he considering that the whole of the stores could be extracted and sent to market, while the bees would thrive upon about six pounds of candy made dryer than usual.

Mr. Hewitt knows as well as I can tell him that it was not until *after* his theory had been advanced that I made any mention of the subject, and my letter will be found in *B.B.J.*, Vol. XI., p. 195, wherein I show that that not only would the process lead to disaster, but that it would be simply impossible to get the combs entirely free from honey so late as September 20th; and, moreover, the act of exposing the pollen, in addition to the wet combs and frame of candy, would cause unseasonable breeding and activity, the very thing which Mr. Hewitt hoped would not be the case. If mild for a week or two after inserting the candy (which often is the case at the date named), the same would be stored as syrup, or at least the balance would be, after the requirements of the extended brood-nest had been attended to, and some other consumed in building new combs in the candy frame, and the wide space given the bees to cluster in; and who does not know at what expense of vital energy comb-building is carried on late in the year? Mr. Hewitt doubtless knew afterwards to his own cost. In fact it was due to the hint given by some who had begun to try it that Mr. H. then advised the insertion of candy at a later date, finding his first legs fast failing him. How the starving process he then recommended, and the addition of candy at the last moment, succeeded, is best shown by his own silence the following spring. Mr. Hewitt was so satisfied that the whole thing would succeed, and that he had given a new plan of wintering, that he was going to hang the whole of his stocks upon this candy peg. No doubt there were many who hoped to hear from the author of this new theory, after his bees were wintered, (?) but that the result was not published no practical bee-keeper was surprised.

There was nothing new in giving candy in frames, as the same thing had been done for years before Mr. Hewitt mentioned it; and if he has now settled down to the knowledge that candy can only be relied upon in winter when given as an *addition* to liquid stores, then his own good sense ought to tell him that he has no claim either to a new method of wintering or a new way of using candy.

In one instance I notice that Mr. H. does mention that he could conceive no better way of feeding bees from spring till autumn than by inserting frames of candy, but it may interest him to know that long before I knew his name, I had been remarkably successful with candy poured into frames for stimulative feeding, but this (called by its right name 'candy feeding') has been entirely superseded in my own apiaries by my present plan of 'dry feeding,' with the enamelled sheet to induce the necessary moisture.

The strange part of it is how Mr. Hewitt could have mixed up this wintering theory and all the troublesome candy-making with the system which I have made public after the problem had been reduced to practice; a process, too, which I recommended only to be used during the months of activity, and by which there is no cooking or other preparation needed.

Mr. Hewitt is fully aware that I have not advertised my feeders for sale, and that he should say that I have done so cannot be wondered at, considering the heedless expressions of which he seems to be capable. Had he been only as consistent and honourable as it appears he would wish others to be, there would now be no need for me to remind him of his own position in relation to the theory presented by him.

Mr. Hewitt's statement with regard to wintering on candy *alone* will be found in *B.B.J.*, Vol. XI., pp. 119 and 155; and though he may feel disappointed that the theory did not meet with general approbation, he may rest assured that the bee-keeping public would willingly give him his due if only he could show that he had introduced something worthy of their notice. At the same time I would ask him in a friendly spirit to abstain from attacking others in the manner that he does, and above all, before doing so, to be certain that he has truth and justice on his side.—S. Simmins.

THE JUDGING AT SOUTH KENSINGTON.

[576.] I really cannot agree with Mr. Jenyns (see letter in last issue) in thinking that non-compliance with the conditions under which prizes are offered is 'a trifling matter,' and that because Class I. at South Kensington was 'exceptional and new in its purpose' 'it might very well be considered independent of rule.'

If rules and regulations at shows are to be of service they require to be rigidly upheld until reversed. Otherwise the confidence of exhibitors and the public generally in shows and show authorities will not be maintained, and chaos and discredit will ensue.

I leave it to your readers to judge whether 'Wilts,' in entering a protest against the judges' action, is lacking in 'a desire to promote the great objects of the exhibition;' or whether the recent action of the judges in overriding the conditions laid down for their guidance may not more truly prove a serious blow to the cause.—County Secretary.

ELEMENTARY SCHOOLS AND BEE-KEEPING.

[577.] Will you kindly allow me to state for the information of 'B. B.' and other enthusiastic bee-keeping schoolmasters that a cheap edition of my *Book about Bees for Young Readers* will be issued in a few days at a low price suitable for a reading book in schools.—F. G. Jenyns.

HONEY SEASON OF 1886.

[578.] You did me the honour of inserting in the *Bee Journal* a letter (519) asking from such of your readers as thought well a return of honey produced in their apiaries in 1885 and 1886. My object was to compare results, and to make a beginning of registering the yield, about which I hoped to know more year by year, and to help thereby some that ask—What is my

honey worth? What am I to do with it, for I cannot sell it?

That all honey produced here has a market and a price I fully believe, as also that the late increase in the number of producers does not affect my conclusion. The market may be affected by the quantity on offer, the price will be lower, that is all,—the honey sooner or later passes into consumption.

But to make a weak market for anything, let the quantity to be dealt with be unknown, its producers unclassed, the dealings universally retail, and the end is reached—want of inquiry, prices anyhow, show it. To make a strong market reverse all this. I think I was not wrong in beginning to get at the *honey we make*.

I submit these thoughts, for to my inquiry I had scarcely a response from any but my neighbours, though the first post card showed me that the form of my return was properly understood. My returns are too few to generalise upon. I have then to say that I cannot add to or take from the statement I observe to have been repeatedly made, that 1886 is a bad honey-year.

Bee-keepers of South Leicestershire and North Northamptonshire do not accept this conclusion for themselves. 1885 was an unusual honey-year. My own and other adjoining apiaries under settled management show one-eighth to one-eleventh less than theirs.—WILLIAM B. BRAGG, *Market Harborough, Sept. 10th.*

MANIPULATING TENT.

[579.] I keep a good many bees, about forty stocks, and used to be often in trouble amongst so many when I had occasion to open a hive. I therefore devised, last year, a tent to put over the hive which I was manipulating; but as it was near the end of the season before I tried it, I thought it advisable to gain a year's experience before I gave the idea to my fellow workers.

The tent is six feet high, six feet long, and three feet wide, made of light strips of wood and diagonals of cord, the whole covered with Paperer's canvas, one end being untacked for the purpose of getting in and out. There are two parallel bars running lengthways, level with the hands, for carrying the tent about with, to do which I walked inside, and I find it, thus constructed, to be all that can be desired, and the cost is very trifling. By unscrewing the frames at the corners, the whole collapses, and can be stowed away when not in use.

Whilst the bees are gorging, I place the tent over the hive, thus shutting out all homing bees and robbers. On opening the hive, all flying bees go to the top of the tent, and never interfere with me, their sole desire being to get out. I require neither veil nor gloves, although most of my bees are hybrids. I shake the bees out of sections, cut out or insert queen-cell, and do the most troublesome work quite leisurely inside the tent, feeling that I cannot be molested by any strangers, which are generally the cause of irritation to the bees when a hive is opened. I am independent of weather, and can choose my own time; nor have I once had a queen balled, which often happens when robbers enter or the sun's direct rays shine into the hive on a hot day. After the manipulation is over, and everything made snug, I lift the tent off, and simply turn it upside down, when all the bees which remained inside immediately fly home, and the bees belonging to the other hives do not know that anything has happened. I find it most useful, and would not be without it under any circumstances, and I should advise all bee-keepers who have more than one hive to adopt the *manipulating tent* in future.—C. KINGSFORD.

PATENTS RELATING TO APICULTURE.

[580.] Having business at the Patent Office the other afternoon I looked up the patents applied for in 1884, '85, and 1886, up to the present time, in connexion with apiculture, and I give a list of the same below. It will be seen that several have obtained provisional protection only, which lasts for nine months, and have not cared to protect their inventions longer; others have yet time in which to complete should they wish to do so, and some few have completed. If you think it will interest your readers I will from time to time send you any further patents that are applied for. I am frequently at the library at the Patent Office and can without trouble keep you posted up.

In the reading-room there are all the English, American, and foreign scientific periodicals as they come out, and any person can see them and have the use of the library by simply signing their names in a book upon entering.

The expense of provisionally patenting, according to the agent employed, will cost from 1*l.* 12*s.* to 5*l.* 5*s.*, or you can do it for less if you do it yourself, although I would not advise this. The completion will cost 6*l.* 6*s.* more. In these days people appear to think it right to copy anything they see and call it their own, not even giving the inventor the credit of it by calling it after his name or otherwise. It therefore becomes a question whether it is not worth while to protect any invention by patent as the cost is now so different to what it used to be.—JOHN M. HOOKER.

No.		Date of Application.	Provisional Accept. for 9 Months.	Complete Acceptance.	Patent Sealed.
	1884.				
7543	Hole—Bee-hives	May 10	May 23		
9794	Clarke—Bee-hives ...	July 5	July 22	May 1, 1885	July 7, 1885
	1885.				
409	Mason & Buchan—Bee-hives	Jan. 12			
7971	Wray—Separating honey from comb	July 1	Oct. 16		
8862	Lyle & Estrick—honey substitute	July 22	Aug. 14	June 1, 1886	Aug. 6, 1886
9497	Abbott—Bee-hives	Aug. 8	Sept. 11		
9793	Lyon—Metal ends	Aug. 11		Sept. 25.	Dec. 1, 1885
	1886.				
4315	Stone & Perry—Honey sections	Mar. 27	May 7		
5036	Allen—Sections for the super of bee-hives ...	April 10	April 23		
6821	Rudge—Ventilating bee-hives	May 21	June 22		
6951	Rollins—Bee-hives	May 24		July 2, 1886	
8290	Dixon—Bee-hives	June 23	July 27		
8813	Meadows—Honey extractor	July 6	Aug. 27		
9239	Welch—Section case for use in bee-keeping for comb-honey	July 16	Aug. 10		
10314	Hooker—Uncapping the cells of honey-comb on one or both sides	Aug. 12	Sept. 7		
11498	F. Shorten—Apparatus for feeding	Sept. 9			

SELLING HONEY.

[581.] I read with much interest the discussion on the difficulty of finding a market for our honey, and I think that this question of disposing of our products is the most pressing one before us, and should at once engage the attention of our leaders. I give you my experience, I began last year only, this season I have had about seventy 1lb. sections to dispose of. I am a dispensing chemist in a small town, in the centre of the High Street, have made a fair display of the sections in my (air-tight) window with a ticket showing prices '8*d.* 9*d.* 10*d.* each,' according as they are well or partly filled. Then I have a neat glass case on my counter with a dozen sections in, and also a handsome card showing that I gained first prize for comb honey at our local Horticultural Show. Beyond this I have talked to my customers about bees and honey on every opportunity with the grand result that I have sold about 25*s.* worth up to date. The B.P. is always greatly interested in what I tell them, express admiration of my sections, say

how nice they look, &c., and end by saying, 'But I don't eat honey myself, I don't care for it.'

Two friends who began bee-keeping with myself, but who are not so well placed for selling as I am, are beginning to wonder whether they will be able to *give away* their surplus stock. It certainly would not pay the small bee-keeper to send a few sections up to the Honey Company.—WILTS.

PROMOTION OF BEE-KEEPING AMONGST THE YOUNG (559).

[582.] With reference to Mr. Jenyns' suggestion that a column should be set aside in our *Bee Journal* for the young, I should like to make one or two suggestions.

I think if such a paper as the *Boy's Own Paper* could be induced to give a column a fortnight or once a month to bee-keeping, it would be more likely to come before the notice of the young. It would be a great step in the right direction if permission could be obtained from the editor of such a paper as the above-mentioned, for some well-known bee-keeper to write some papers on this subject to appear in his periodical. I well remember one of the first times my attention was called to bee-keeping was in the *Boy's Own Paper* in the year 1879, when some very interesting articles were written by Mr. W. H. Harris; but of course bee-keeping has made advanced strides since that date; and I have also no doubt the numbers which they appeared in are, by this time, out of print.

I am not aware if any further papers on the subject have appeared in subsequent numbers as I have not seen the paper for a year or two.—W. G. C.

RUE AND BRYONY HONEY.

[583.] The nectar secreted by rue (*Ruta graveolens*) is anything but pleasant, the least portion tastes unmistakably of the general odour of the plant. Rue should not be cultivated for bee-forage, although it secretes honey plentifully. A few plants, however, may be grown for culinary purposes in any garden, if required; and to prevent the bees gathering the honey, the flowers may be cut off just before they open, which will be an advantage to the plant.

Another plant that bees should have as little access to as possible is the white bryony (*Bryonia dioica*). This plant secretes a most acrid nectar, and when stored in sections is very unpleasant indeed. Bees are excessively fond of this bitter honey, and will gather quantities of it in the latter part of the summer if the plants are not destroyed.—HY. DOBBIE, *Thickthorn*.

SOUTH KENSINGTON SHOW.—PROTEST AGAINST PROTEST (557).

[584.] Surely in stating that the object of the County Competition 'was *not* to show how honey ought to be prepared for market,' the Rev. F. G. Jenyns must have overlooked the following clause in 1st Division of the Schedule relating to Class I:—'In judging the quality of the honey, *the attractive appearance for market*, and artistic effect in staging, will be the *chief* points for consideration.'

I do not think that *any* of us expected *the awards to be altered* in consequence of our protest; but we *did* expect an acknowledgment of it, and some explanation of the apparent non-compliance with the rules in the schedule.

I am sorry to have hurt any one's feelings, and I have no wish to prolong the discussion. The sole object of our protest and the publication of my letter (548) will be gained, if it leads, 1st, to rules being made *unmistakable*, and then, secondly, to their being *enforced all round*. THIS is the important point.—W. E. BURKITT, *Hon. Sec. Wilts B. K. A.*

QUEEN-INTRODUCTION *à la* SIMMINS.

[585.] Mr. Tolmin was the happy (?) owner of a Holyland queen. The name is suggestive of all that is pure, gentle, and good, but she was the mother of a race of 'demous,' so he has passed her on to 'Amateur Expert.' Complimentary! Accordingly, she arrived safely on Saturday, September 11th, at 5 p.m. A hive was opened that contained a queen that had just finished her fourth season. She owed me nothing, except a better fate. There was brood in four frames in the last stages of perfection, but no eggs, and she herself in that diminutive state that denotes rest after a prolific season. To find and bottle her was the work of three minutes. The workers were quite taken by alarm, having had no smoke for the past four weeks, and some of them stood on the tops of the bars with a minute drop sparkling on the tips of their business end in a very threatening attitude, but they were quickly and quietly closed up again, three frames only having been removed in the operation.

Her—shall I say Satanic?—majesty is found all safe and lively, and is placed in a *clean* pipe-cover cage on a piece of cardboard *alone*, and is timed for the prescribed half-hour; at the expiration of which the hive is found to be in a state of most violent agitation, fanning as if it were a hot evening in July, and rushing about madly. A corner of the quilt is turned back, two puffs of smoke are given, the cage is gently slid over the bar, in walks her majesty, and all is made snug. This is at 6.45 p.m. On Monday, at 6 p.m., I go to examine. If it were not for the sake of the readers of the *B. B. J.*, I should certainly have not opened the hive; but a few gentle puffs of smoke, the dummy and four frames are slid back, one frame is taken out, and there is her majesty quite at home; there were no eggs. I do not expect or wish her to lay; but I do hope by-and-by to find queen-cages to be things of the past. Gentle readers, next season when you are manipulating your bees with pleasure and no stings, do give a kind thought to your humble servant,—AMATEUR EXPERT.

BEES KEPT IN LONDON.

[586.] I think this has been a very good season for bees kept in London. From two hives here in South Kensington I have taken 63 lb. supers and two frames weighing 9 lb., leaving in each hive over 15 lb. of sealed comb for the winter supply. Of course this appears small to country bee-keepers, but for a district without a clover field within miles it is perhaps worth noting.—J. F. B. FIRTH, *The Grove, Boltons, South Kensington, Sept. 11th.*

FUNGUS OR POLLEN?

[587.] On Saturday last, on examining my hives, I noticed, in one of them especially, a large majority of bees had on their backs a light yellow substance, which I suppose to be a growth of some description—kind of fungus—very much resembling light chrome-coloured pollen in appearance. Until the last fortnight I have never noticed anything of the kind, although I have now kept several hives for some years. I suppose it must be a disease of some description, and should esteem it a great favour if you would through the medium of the *British Bee Journal* explain to me the nature of the same, if it is a disease, and also recommend me a cure. This particular hive three weeks ago was on twelve Standard frames, but I found it necessary to remove three of them last Saturday, as the bees had dwindled somewhat. I also noticed in the hive standing next to this one the same phenomenon appearing. Any information you can give me will be thankfully received, as I have never heard of any other bees having been

situated in a similar way.—J. METCALF HART, *Hillingdon House, Sutton, Surrey.*

[We have requested that some of these supposed diseased bees should be forwarded to us, but we have not been gratified by receiving any reply. We do not think that the substance on the back of the bees is a fungus or the result of a disease. Most probably it is a pollen which has adhered to the backs of the bees. Dzierzon, in *Rational Bee-keeping*, says: 'Professor Theodor von Siebold has proved, in the *Bienenzeitung*, that the yellow or dark-green tufts showing on the foreheads of individual bees are not a fungoid growth at all, but are the very elastic pollinia of certain orchids that are left sticking to the bees.'—ED.]

HONOUR TO WHOM HONOUR IS DUE. [561.]

[588.] With reference to the above, I can vouch for the truth of every word Mr. J. M. Hooker says in reference to Messrs. Green & Son's metal ends. I claimed the hive mentioned by Mr. Hooker, the bars being fitted with metal ends, at South Kensington Show in 1881; also that I ordered two gross of the metal ends from the same firm in 1882, and also several gross since; but, having for several reasons discarded metal ends in favour of broad shoulders, I do not now use them. Were I inclined to use metal ends again, I should certainly prefer Messrs. Green & Son's to all I have yet seen, and I believe I have seen nearly or quite all that are in the market. I may say that I have not the pleasure of knowing Mr. J. M. Hooker.—W. DANIELS, *Newbold-on-Avon, near Rugby.*

Queries.

[589.] Will some one give the points for judging honey in 1-lb. sections?—TREF EGLWYS.

[590.] What are the best means of obtaining good 1-lb. sections for competition?—TREF EGLWYS.

[591.] When a queen is introduced to a hive and queen-cells are formed and capped over, is there any danger of bees destroying the alien queen?—TREF EGLWYS.

[592.] Will some bee-keepers give their experience respecting 'Huber's' method of queen introduction, which is quoted as follows: 'If a colony of bees have no queen, and no means of rearing one, they will invariably accept a fertile queen when presented to them.' Is it possible that Rev. G. Raynor does not make some mistake in saying that the above statement of Huber is absurd?—TREF EGLWYS.

[593.] Will some one give drawings of cages and hives suitable for queen-raising and rearing, and describe some of the methods of queen-raising?—TREF EGLWYS.

Echoes from the Hives.

Wheatley, Oxon, Sept. 12.—I have just completed the operation of cutting winter passages in twenty-one stocks, and have been so very much stung in the case of several hives, that I feel disposed another year to dispense with it. I have done it every year for four years before this year, and have never been inconvenienced; but, though I think nothing of three or four stings at a time, twenty or thirty are irritating, and make one's hands swell. I never use gloves, and in the middle of July took nearly four hundred sections without using any smoke or carbolic acid, and with hardly a sting. I wish some one would write an amusing article on 'The Pains and Pleasures of Bee-keeping.' It seems impossible to manipulate hives this month. However late I start, my Ligurians and hybrids attack and rob the open hives, and then the dusk comes on, and the bees of the open hive begin to be savage. I have tried 6.30 to 8, but the Ligurians are early risers, and worry the other bees just the same.—L. WILLIAMS.

Port Mahon, Minorca, Sept. 6.—Last March I had only one good hive with which to begin operations, and fearing failure bought four or five more, and transferred to modern hives. These last were quite weak, the bees in one only covering two frames, and the others four or five, and I resorted to feeding to stimulate breeding. By the middle of April all had increased wonderfully, so I stopped feeding and put on supers. In May all had finished sections, some only a very few, some a score, and my best hive of the year previous about fifty. After May 15 our honey flow came down of a sudden, owing to one of those terrific gales which so annoy us; but honey continued to flow in diminished quantities for a month longer. Our gummers are very dry, generally no rain falling from the middle of June to the middle of September, so that except where artificial irrigation is resorted to, the fields are all parched up. Imagine our surprise, then, when about mid July we visited our apiary in order to take off the empty sections to find quite a respectable number of them filled and capped with rich white honey. On inquiry we found this came from a modest little wild flower called, I think, salt-wort. From these half-dozen hives I have taken some 300 one-pound sections and four swarms, or to speak more correctly, the swarms have yielded most of the above result, for the four parent hives have only given me forty or fifty pounds of extracted honey all told. I am now having one hundred more hives built, two storeys high, and hope next summer to give a better account of my stewardship. We have a species of heather—*erica* they call it—which is now beginning to blossom extensively, and from which honey may be gathered in quantities till December. But it is a dark honey and pungent to the taste. What do people in England do with such honey? And would our fine Minorca honey find a market in the 'tight little island?'—F. C. A.

The Mall House, Lismore, Sept. 11.—I can only send you a melancholy account of the state of things here. Nothing but rain, varied with a storm of wind now and then. Bees unable to get out much, and a horrid general dampness all round. I have made my hives up as comfortably as I can, and am feeding vigorously, as the lower hives were almost denuded of stores; everything had been carried up to the upper storeys. I fear my hives at the heather will do very little comparatively to 'what might have been' had the weather been favourable. My yield from six hives under my own care has been as follows:—255 lb. sections and 21 lbs. of run honey. Of this 71 lbs. came from one hive, storified, which did not swarm. It gave 60 sections and 11 lbs. run honey from unfinished sections. The next best hive gave 57 sections, and the four others 52, 46, 35, and 5 respectively. The last hive, which only gave five sections, rather puzzled me. I examined it twice during the summer, each time finding a *fair* quantity of brood in it, but not enough to make me spare the queen, whom I decided to supersede at end of season. However, when I looked in again the other day, and was about to unite it to a stock with a young queen, I found it so improved and so full of brood, I fancied they must themselves have superseded their old queen, so did not pursue my intention. It seems very busy now, and is carrying in lots of pollen. Its progress in early spring was hindered much by robbing, so I had to give it time, and it seemed making up lost ground fast, when suddenly a check came, and the bees left the sections gradually. Besides the yield of honey quoted, I got two fine swarms, and was lucky enough to secure several stray ones besides. I suppose, considering the season, this is not bad, but profits are much reduced by the amount of feeding I had to give in spring, just to keep the big colonies alive. And now I must do the same again, as nothing is coming in, and the hives are very light. As this is the conclusion of my third season of bee-keeping, and as I have risen from two hives to be the proud owner of twenty stocks of sorts, I think I ought to change my *nom de plume*, which with your leave I will do.—*Late* IRISH NOVICE, *now* F. W. C.

NOTICES TO CORRESPONDENTS & INQUIRERS.

H. W. L.—*Mites in Old Combs containing Pollen.*—These mites will do no harm beyond destroying the pollen, which will be no great loss. Guard the combs from mice and moth. The fumes of sulphur will destroy the latter.

J. B. S.—*Utilisation of Bees from a House.*—If you succeed on your second attempt in capturing the queen, and also get some brood, you had better unite the whole. If you do not get the queen, you had better unite the bees to one of your stocks, or you can introduce a queen by one of the methods recently described in our columns.

R. E. C.—*Cleaning Combs.*—The reason that your bees remain on the combs given them and treat them as part of their hive is that they are crowded in their hive. If you place the combs in the open air they will soon be cleared out, but there is the danger of setting up robbing.

T. T.—*Queens laying Drone Eggs.*—It is not at all uncommon for young queens, immediately after fecundation, to commence by laying a few drone eggs, but this rarely continues over a day or two. Keep your queen under observation, and if she continues to lay drone eggs you may consider that she has failed to mate. Malformation occasionally, but very rarely, prevents fecundation. The failure generally arises from wet or cold weather preventing successful mating until the queens become too old. As a rule, if a queen fails to meet the drone before she is three weeks old she becomes a drone breeder. Both queens and drones are very particular in the choice of weather for the wedding flight.

One in Difficulty. — *Unsealed Combs.* — The unsealed honey will not keep sound, but will become acid and will cause dysentery if left in the hive. Extract all unsealed combs and store them up for use another year. Close up your hives with close-fitting division-boards to as many frames as the bees can fairly cover, and feed copiously, without delay, either on the extracted honey or sugar syrup. If you rub together the salicylic acid and borax and pour upon them warm water—in the quantities prescribed—and use in the syrup the quantity advised in Mr. Cowan's book, you will find the bees will consume it greedily. Probably they did not take the syrup because they were storing honey from the fields, but the case is different now.

A. G.—*Metal Ends.*—We think that the discussion on metal ends has been of service in ventilating the subject, but there appears no reason, now that both sides have been heard, that it should be further continued.

North London Cockney.—The bee when it reached us was dead. It is a hybrid one, several removes from purity.

H. J. Bostock.—The parasite on the bees is the *Braula cæca;* the nature of which may be ascertained by reference to previous volumes: see indexes.

E. S. C. G.—1 and 2. A swarm from a swarm is usually called a virgin swarm, and will be headed by the old queen. 3. If you are doubtful about the presence of a queen drive the stock again and try to find her, and by separating the combs as far as they will go look for the presence of brood in the centre combs. Do not winter in doubt. Better to unite at once to another stock. The grubs turned out were most likely drones. 4. *Fighting.*—The cause was robbing. The remedy: keep strong stocks only. Reduce the entrances of any weak ones by perforated zinc, as recommended in 'Useful Hints' a few weeks back. 5. *Heather three miles away.*—It is not likely that your bees would do good work on it, although some may reach it; the flight is too long. 6. *Supers not filled in July.*—The weather in the latter part of that month was quite against the bees and any honey-gathering.

J. J. S.—*Treatment of Foul Brood.*—Procure a bottle of 'Cheshire cure' and act according to the instructions accompanying it. See advertisement in number for August 19th.

J. C.—*Uniting.*—If you unite you must sacrifice one queen. You may be able to winter the two weak stocks in a twin hive as you propose. If you intend to try to do so get them into it as soon as possible and feed up. You will find the instructions for uniting given to 'West Cornwall' correct.

F. Lester.—The Globe Thistle forwarded is the Cotton Thistle (*Onopordon acanthium*), and is very attractive to bees, especially humble bees.

M. L. G.—The honey forwarded is a mixture of fruit and lime honey. It is not very pleasant to the taste. It may be given safely to the bees, but we recommend that before doing so it should be boiled.

H. L. W.—We have forwarded the comb to Mr. Cheshire.

John M'G.—The three packets of sugar marked 3, 4, 5, which should be styled granulated or centrifugal, will all be found suitable for making syrup. Nos. 1 and 2, which are called by the trade 'Pieces,' will not answer the purpose of dry sugar feeding. Use a raw sugar, such as Muscovado or Barbadoes.

Walter F. Cromey.—We have forwarded your request to our correspondent 'Amateur Expert' 'to send you a section ready done in his own way,' but we confess we can scarcely expect him to comply with such a demand on his time and pocket.

R. J. Tomlin.—Queen arrived safe. Thanks; will write you privately later on.—A. E.

J. D.—We much regret that we are unable to give insertion to your communication. Its proper place is in our advertisement columns, and therefore for obvious reasons we cannot give it a place among our 'Correspondence.'

W. Ditty.—*Honey Liquor.*—We have tasted the honey liquor forwarded, and we cannot say that we appreciate it. It is too weak and inclined to be sour. Having a remembrance of a honey liquid which, equally as poor as yours, resulted in a few years in a splendid mead, which carried away at shows a number of prizes, we cannot say what yours may be in the course of some years. We recommend, however, that you should wait and see what the result of your present adventure may be before you experiment on the cappings of the present year. The cappings of this season we should treat as follows:—Place them in a vessel, raise the temperature sufficiently to melt the wax, which when cold will cake with the dirt and other impurities adhering to the under side. The liquid remaining would be fairly pure honey, which could be given to the bees, or sold as second-grade honey. As you are desirous of procuring a honey drink, we would recommend that you proceed on the accredited lines of those who have gone before you. You will, in our former volumes, find many valuable receipts for making mead, giving the proper proportions of honey and water, and the amount of fermentation necessary.

Devonian.—*Condemned Bees Robbed.*—If you had hived them at night, as recommended in our article, they would by the morning have been in a better position to repel the attack of the robbers, but being utterly disorganized by being just hived they offered an easy mark for attack. Try hiving the next lot at night, give full combs of honey if you can.

E. P.—*Combs from Hives affected with Foul Brood.*—It is unfortunate that you have mixed them up with others. The honey itself will not be affected, but the combs will contain the germs or spores of the bacillus, which may be carried to other hives as they are cleaned out by the bees. You had, as a precautionary measure, better feed all your stocks with medicated food.

J. W.—*Queen-cells now existing.*—As you found freshly laid eggs you need not be alarmed. Rudimentary cells, just cups, are often commenced for no apparent reason and not completed. You may leave them alone.

F. J.—The general opinion is in favour of non-porous quilts. Although some very experienced bee-keepers are in favour of porous ones. The bees constantly protest against upward ventilation by propolising the quilts.

F. C. A.—*Sherry Casks for Honey.*—There would be no objection beyond the possibility of a slight flavour being communicated. Remove the heads before filling, when the honey sets it will be difficult to get out if poured in liquid through the bung-hole.

*** *Our communications have been very numerous during the past week, and we are reluctantly obliged to postpone several to our next issue.*

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

CANADIAN AND BRITISH BEE-KEEPERS.

The hope expressed in our last issue, 'that some means would be devised by the Committee of the B.B.K.A. to bring together in union the Canadian and English bee-keepers,' has taken a practical shape. The matter was discussed at the meeting of the B.B.K.A. last Wednesday, the Hon. and Rev. H. Bligh and Mr. J. M. Hooker being appointed as a sub-committee to make the necessary arrangements. Wednesday, October 20th, was the date suggested, but in order to secure the attendance of Mr. Cowan, the chairman of the B.B.K.A., endeavours are being made to arrange the event for Wednesday, October 6th. It is proposed to arrange for the whole of the proceedings to take place at South Kensington, commencing at 12 o'clock by a meeting of the English county representatives for business purposes. At 2 o'clock it is proposed to hold a luncheon, at which our Colonial friends will be the guests of the British Bee-keepers' Association. A visit will afterwards be made to the Colonial exhibit of honey, &c., the whole to conclude with a conversational meeting commencing at 5 o'clock. These proposals have been submitted to Sir Philip Cunliffe Owen for the approval of the Executive Council of the Indian and Colonial Exhibition.

NORTHUMBERLAND.

Steps are being taken towards the formation of an Association for the above County, persons desirous of becoming Members are requested to communicate with Mr. F. E. Schofield, Morpeth.

VILLAGE BEE-CLUBS.

Now that the season of exhibitions and shows is well-nigh over, and now that the sounds of questionings and discussions on awards of judges and merits of appliances are gradually being hushed down, it may be considered to be opportune to turn to the consideration of the best means to be adopted for the maintenance of the present position of bee-keeping, and for the still further dissemination of the knowledge of the principles of this pursuit.

It would not be desirable for us at present, after the valuable paper of the Rev. J. Lingen Seager, read at the Conference Hall on August 4, 'On the Organization of County Associations,' to discuss the requirements and necessities of Associations. They have done, are doing, and no doubt will continue to do, a great work in the development of bee-keeping in those counties in which they have been established. We may, however, in passing, express our regret that some of these Associations have left what we may designate 'the Confederation,' and others have died either of 'dignity,' as 'John Peel' says of his county, or of despair of getting any one to perform the onerous duties of County Secretary, or of overcoming the *vis inertiæ* of unwieldy counties. We would now only express a hope that those which have left us may be restored to their former position; and that the others may be resuscitated by some one stepping forth with the requisite tact and ability to energise and quicken the elements of vitality which are now lying dormant in their midst.

Our object at present is to point the attention of our readers to the advantages which may be derived from the institution of Village Bee-Clubs. These under proper management would prove of great service in rendering assistance to Associations in visiting remote parts of the county to which they otherwise would have a difficulty in penetrating. The great requirement would be that the club should be superintended by some one who has at heart the benefit of the inhabitants of the place and the young men and youths in the village, and who has come to the conclusion that one of the benefits which may be conferred on them is spreading a knowledge of the practice of bee-keeping. Let us take, in illustration of our views, a club that has recently been formed in Wrockwardine, Wellington, Shropshire,—the county referred to by our correspondent 'John Peel.'

Miss M. E. Eyton, of Leaton, Wrockwardine, having conceived the idea of establishing a bee-club for the benefit of the villagers in whose welfare she was interested, called to her assistance the services of Mr. C. Brown, expert of the B. B. K. A. On the 25th of June the villagers were convened to hear a lecture by Mr. Brown on 'Bees: their Natural History and Management.' The Vicar, the Rev. A. P. Salusbury, took the chair on the occasion. The attendance was good, and the lecture being illus

trated by diagrams and a number of hives and bee appliances the audience were much interested in the subject. At the close of the lecture, it was resolved to form a bee-club, and Miss Eyton kindly offered her services as local secretary. The rules for the guidance of the club were read and canvassed, and a committee appointed. Miss Eyton, desiring to create a spirit of emulation amongst the members, offered a special prize for the best result from one hive during the present season—a kind of a Bligh Competition on a small scale. Seventeen members constitute this bee club. We hope to be able at an early date to lay before our readers the results of the working of this Club during the present season; and we believe that if such clubs could be more extensively formed they would be found exceedingly useful in bringing bee-keepers into closer contact and enabling them to compare their mutual experiences.

Of course, in the establishment of such clubs, there must be some difficulties to contend with, and some obstacles to overcome. The villagers of Wrockwardine had no means for purchasing bees. It therefore was necessary that a special arrangement should be made in order to start the members with a swarm. Swarms were lent to them on the following terms:—They engaged either to pay a weekly sum or to pay 15 lbs. of best run honey, valued at 8*d.* per pound, or pay half in money and half in honey. If these terms were not adhered to, the bees were to be returned to the apiary they came from. We should say that the swarm, weighing about 3½ lbs., was valued at 10*s.* 6*d.*

We append for the guidance of those who may desire to form similar clubs the terms of this 'Swarm Competition:'—'For the best result from one swarm, either natural or artificial, first prize 14*s.* 6*d.*, second 5*s.*, third 3*s.* 6*d.* 1. Swarms to be hived between present date (*i.e.* June 25) and July 10th, when all entries will close. 2. Net weight of swarm to be given. 3. No comb completely built, or comb containing honey or brood, to be used. 4. An account of feeding to be carefully kept, showing quantity given, and how long feeding was kept up. 5. No bees or brood to be added afterwards. 6. Feeding at the time of honey harvest to disqualify the owner, excepting for establishing a swarm.' An examination of all hives in competition was to be made at the end of September by a judge or judges appointed by the committee.

We also give some of the rules of the club:—

XX. Cottage members losing all their bees from any cause not wilful neglect, will be given either a driven swarm, or be helped by the Club to buy some others.

XXI. Cottage members wishing to buy bees or bee appliances, may pay for them by bringing their district secretary a weekly sum, to which the Club will advance 2*d.* in the 1*s.* till the whole amount is made up, when they will receive whatever was subscribed for.

XXII. A small stock of Abbott's broad-shouldered bars and foundation to be kept by the district secretary for members to buy. Other makers' bee appliances or hives will be procured for members by the secretary, on the condition that they are paid for in advance, and excepting for cottage members the charge of carriage to be paid as well.

XXIII. Every member will have the right to use a club extractor, honey knife, smoker, and dummy for making up bars, on giving a two days' notice to the district secretary. The orders to be taken in rotation, first come, first served. These things must be returned or passed on according to the secretary's direction, well cleaned, dry, and in good order, or in default pay a fine of 3*d.* and cost of damages.

XXIV. Members wanting advice about their bees will be given it by the district secretary, or other local advisers appointed by the Club. If the funds of the Club will allow, an expert will also be appointed, who, when applied for, will be sent in the spring and autumn to examine hives and give instruction.

XXV. Honey which members cannot dispose of, if properly extracted and strained, may be sent to the secretary, who will put it with other members' honey, and send it to a honey company to be sold at 5*d.* or 6*d.* per lb.

We shall be glad if other districts can be induced to start such clubs, and the above may prove serviceable in enabling them to do so. Bee-clubs can be formed noiselessly and undemonstratively, and under proper superintendence will be productive of much good. Who will follow the example set by Miss Eyton?

WASPS.

The scarcity of wasps at this season, notwithstanding the unusual number of queen-wasps in the spring, appears to be very general. Mr. E. Lupton, of Headingley, Leeds, writes:—

'Here, as in Lincolnshire, the wasps are conspicuous by their absence. In my garden, which is a few acres in extent, I have often destroyed half-a-dozen nests. This year there is not one to destroy, and I have not seen a single wasp at my bee-hives, whereas last year at this time I killed dozens on the alighting-boards.'

Mr. W. Moggridge, Blackwood, near Newport, Monmouthshire, writes:—

'I also noted great numbers of queen-wasps in the spring, while very few wasps are to be seen now. If this is the case generally, it would be interesting to know the reason.'

Rev. A. A. Headley, vicar of Portchester, Fareham, writes:—

'In the spring, many letters appeared in your columns as to the unusual number of female wasps this season. Would it not be useful to look for information as to the number of wasps about this autumn, in order to see if there is any correspondence? Here wasps are unusually scarce.'

We have received the same intelligence from many other parts of the country. We believe, as we have already stated, that this paucity of wasps has arisen from a failure of males in the previous season.

SHOW AT SOUTH KENSINGTON.

Our well-known correspondent 'Amateur Expert' has given a long description of the late B. B. K. A.'s Show at the Colonial, in his own familiar style, in the columns of the *Royal Cornwall Gazette*, for August 16th. After reviewing the exhibits and criticising the awards pretty freely, he closes up with the following:—

'It was a rare opportunity to meet old friends and compare notes; some we have had the pleasure of meeting elsewhere, others we only knew metaphorically. John Walton was there, Mr. Peel's *bonâ fide* cottager (not the

manufacturer of Muskham). There also was the "Sir Wilfrid Lawson" of bee-keepers, the veteran Lawson Sisson; he looked as cheery as ever, and his voice is like a bell. "Platelayer" made a holiday of the St. Lubbock's day; we were pleased to get a chat with him; he knows how to raise honey. One very nice feature was the zeal to give advice and assistance to one another; but we must confess to being rather tickled to hear an enthusiast that commenced last year advising Mr. Cheshire, whom he evidently considered knew very little about bee-keeping, how to raise young queens. Mr. Cheshire, who is always ready to receive as well as give advice, took it very quietly.

'Highly amusing, too, was it to hear some of the passing remarks; we were frequently asked how we fixed the honey in the square boxes (sections), and that bees could build comb in the form of letters was beyond the comprehension of most, until assured we even learnt them to spell. I understand, replies one, "Yours are spelling bees." On Monday I was accosted by a grave elderly gentleman, who apologisingly inquired why all the salesmen of honey were clergymen. "I have noticed," said he, "that clergymen have taken to bee-keeping pretty extensively; I presume to increase their incomes, and I suppose this show is organized to give them an opportunity to sell their honey." This was really too good. I rudely laughed outright, and explained that their position as hon. secretaries as well as mine as a member of a county committee gave us nothing but hard work and scant appreciation. He graciously apologised for the injustice he had done the rev. gentlemen and passed on very much enlightened.

'I wish we could have had a good banquet, not necessarily a costly one, and invited our Colonial friends to it. If anything is likely to convince them we are in possession of the market, we judge this show is. We have given the British public such a sight as they never beheld before. The season has been exceptionally bad, but nevertheless we have managed to stage some 25 tons of honey in a form creditable to all that were interested. The effects will be felt throughout all time, and honey must soon take its proper rank as a delicious and nourishing food; and although we as bee-keepers are often prone to grumble, the reminiscence of this great show must ever be happy in our memories.—AMATEUR EXPERT.'

We regret we have not space to reproduce the whole of his letter in our columns, but we are pleased to know our correspondent's wish for a good and cheap banquet is likely to be realised.

USEFUL HINTS.

The weather still continues most favourable for bees, bright and dry, with easterly winds, but our apiary continues in full work on fields of mustard and rape, which are in full bloom in our locality, although soon to be 'fed off' with sheep. At eventide we removed four rather weak colonies to one of these fields, a mile distant from our apiary, when, to our surprise, the next morning, on paying our usual eight o'clock visit to the bees, we found large numbers returning to the old stands, pellet-laden with the bright yellow pollen of the mustard, and, like the fabled king of France who—

. . . 'With his twenty thousand men,
Marched up the hill, and then marched down again,'

we were obliged to countermarch our hives to their previous location.

APIARY WORK.—Let all feeding be completed as quickly as possible. Do not attempt to winter weak colonies, or the probable result will be disappointment and loss. No colony is worth wintering which does not cover well seven or eight standard frames on a day of average temperature for the time of year. Mistakes are easily made here, since, on an exceptionally warm day,—a day on which examinations are usually made—bees which appear crowded on eight frames will be found, when the temperature has fallen 20°, barely to cover four. Not only does Virgil's dictum—

. . . . . 'Nam frigore mella,
Cogit hyems, eademque calor liquefacta remittit,'*

apply to the honey, but with tenfold force also to the bees themselves. It is very important, therefore, when confining colonies to small spaces for wintering, that the temperature should be taken into account.

SEALED HONEY COMBS for winter food are to be preferred, in our opinion, to all other foods. Those who have reserved from the extractor a sufficient number of such to carry all their colonies through the winter have not only saved themselves much trouble in the way of feeding and 'messing about' with sugar syrup, but probably will be no losers in the end. When the forty tons of superb Canadian honey have been sold—as we sincerely hope may be the case—and the store-rooms of our honey companies, and the London dealers, have been filled to overflowing, where shall we poor English apiarists find a remunerative market for our surplus? When wintering condemned bees, our practice is to unseal and extract the honey from the lower part of the combs, and to place six of these combs in the centre of the hive, with a fully sealed comb on each side of them, winter passages being cut through all combs. Five or six pounds of driven bees—three colonies—with a young queen at their head, are then inducted and closed up for winter.

WINTER PASSAGES are most important and should never be omitted, since without such means of passing from comb to comb colonies often perish during long continued cold.

ENAMELLED CLOTH, as proved by our experiments last winter, may safely be used upon the frames when colonies are strong. Several thicknesses of woollen cloth or felt should be laid upon the enamelled sheet, and, capping all, a straw cover, or wooden crown-board, with a couple of bricks to keep all tight and the pressure even. If preferred, the porous material may be placed next the frames, and the enamelled sheet above it, but in that case the former should be changed for dry quilts once or twice during the winter. An entrance, 6 inches by ¼ inch, is kept open for ventilation. Porous material is best over weak colonies.

FLOOR-BOARDS must be thoroughly scraped, and brushed over with salicylic acid solution, before wintering.

CLOSING UP FOR WINTER is better performed now than later. Experience, through many years, has taught us that colonies, *cæteris paribus*, put into winter quarters during the month of September, always come out strongest and best at spring. 'Never put off till to-morrow what can be done to-day' is a good and safe motto in all matters relating to bees as well as in other things.

RE-QUEENING, and queen-introduction of all kinds, should be completed at once. Later the inclination to encase newly introduced queens will be far greater than at present, and the disturbance caused by several manipulations at a later season may prove most injurious to the bees.

'ECHINOPS SPHÆROCEPHALUS' has been exported from central France to Versaile, New York, by Mr. Chapman, and is under propagation and distribution throughout the United States and Canada under the name of the '*Chapman Honey Plant*.' The stalks and leaves so nearly resemble those of the thistle that, were it not for the head, the plant might easily be mistaken for it. The appearance of the head, however, is well defined by

* Winter with its cold congeals the honey, while heat dissolving relaxes the same.

its botanical name, which may be translated 'hedgehog-like and round-headed.' It grows from three to four feet high, each root or crown bearing from six to sixteen round buds, or heads, from 1 in. to 1¾ in. in diameter. These heads stand upright, and the entire surface is covered with small white flowers having bluish stamens. The seed of the plant, unlike that of the thistle, has no *pappus*, or seed down, and cannot be carried by the wind. It is enclosed in a capsule, being in weight and appearance similar to a grain of rye, and falls direct to the ground, hence there is no danger of the plant becoming a noxious weed. It is hardy, easily propagated, and perennial, and flourishes in all kinds of soil. Like the *Melilotus leucantha* it does not bloom until the second year after sowing. As regards the value of the plant as a honey-producer, there appears to be no room for doubt, whether quality or quantity, or both, be considered. Mr. Chapman planted three acres, for trial, near his apiary, and reports that although no other resources were accessible to his bees, owing to the severe and prolonged drought having destroyed all other honey-yielding blooms, yet the bees were storing surplus, and doing well. About 200 colonies were foraging upon the three acres, hence no definite conclusion could be reached as to the probable returns in pounds of honey from a given area, but the entire area was 'alive with bees,' and they visited the flowers from daylight until dark, and at times eight or ten bees were upon a single head. Mr. Hubbard, who is also cultivating the plant, reports that having counted the number of visits made by bees to a single head, from 5 a.m. to 7 p.m., he found it to be 2135. Its time of blooming is from the middle of July to the end of August. A committee has been appointed by the North American Bee-keepers' Association to investigate the merits of this honey-producing plant, whose formal report, based upon all the facts obtainable, will be awaited with interest by the bee-keeping world in general. Mr. Chapman states that he has no seed for sale, except that of the present season; and after the report of the Committee, by which the price will be determined, he will be prepared to offer it for sale in half-ounce, ounce, two-ounce, and four-ounce packages. Will not some of our enterprising seedsmen import a supply of seed from France for the benefit of English bee-keepers? Since, however, the plant appears to be of no further use than for honey-producing, it is doubtful whether it will be much patronised here.

ALBINOS.—The Editor of the *American Apiculturist* describing Albino bees writes:—'This race, or rather strain, of bees has been thoroughly tested in the "Apiculturist" apiaries. The bees are worthless as honey-gatherers or for any use whatever in the apiary. Their good points are their beauty and gentleness. If anyone wants bees to look at, or to play with, purchase Albinos. The beauty of these bees is produced by in-breeding, and is a process condemned by every practical bee-keeper.'

We never could see the applicability of the term *Albino* to these bees, which are simply a light-coloured strain of Italians. We have in our own apiary colonies of pure Italians, and also of Cyprians, lighter and brighter in colour than any so-called Albinos we have yet seen. An 'Albino' is defined as 'a person or animal whose skin and hair are *naturally* white, and pupil of the eye red.' We fail to see how any bee can answer this description.

PAINTING HIVES.—The present month when fine and dry is a good month for painting hives. Towards the end of the time bees fly but little and are not annoyed by the paint. Cracks filled up with putty, and two coats of paint over all, will render the hives impervious to the winter's rain, frost, and snow.

Q. Why is a bee stretched at full length like Euclid's line? *A.* Because it begins with a point and ends with one,—A. E. B. H., *The Chase, Lynn.*

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Committee Meeting held at 105 Jermyn Street, on Wednesday, September 15th; present, the Hon. and Rev. H. Bligh (in the chair), Dr. Bartrum, the Rev. F. G. Jenyns, the Rev. F. S. Sclater, Capt. Bush, J. M. Hooker, G. Walker, and the Secretary.

The minutes of the last Committee meeting were read and confirmed. The Secretary submitted a statement of accounts relating to the Liverpool, Norwich, and South Kensington Exhibitions. It was unanimously resolved that a special vote of thanks be accorded to the Secretary for the successful way in which he had carried out the arrangements of the South Kensington.

The Secretary reported that the Canadian Exhibition of Honey at South Kensington was now in course of preparation, and that the representatives of that Colony, consisting of Messrs. D. A. Jones, S. Corniel, S. T. Pettit, and R. McKnight, would be staying in the country until the close of the Exhibition. It was resolved that some steps should be taken to carry out the suggestions made by Sir Philip Cunliffe Owen in his communication to the Secretary, dated June 17th. The Chairman and Mr. Hooker were appointed as a Sub-committee to make the necessary arrangements for entertaining the Canadian representatives at a luncheon and evening conversazione.

The Secretary reported that active steps were now being taken towards the formation of an Association for Northumberland, and that Mr. F. E. Schofield, of Morpeth, had consented to act as Hon. Secretary *pro tem.*

The Chairman reported that the Examination Committee had fixed Saturday, November 13th, as a suitable date for the 2nd Class Examination.

A vote of thanks was accorded to Mr. Cowan for donations to the Library, *Les Nectaires*, by Gaston Bonnier, and the French edition of his *Guide-Book*.

NORTHAMPTONSHIRE BEE-KEEPERS' ASSOCIATION.

This Association held a small show in the show-ground of the Northamptonshire Agricultural Society in Burghley Park, Stamford, on the 8th and 9th inst. The judges were J. Rooke, Esq., Weldon, and J. R. Truss, Bainton Heath, Stamford. The following is a list of their awards:—Class 1.—Twelve 1-lb. sections: 1, silver medal (B.B.K.A.), C. Honey, Burghley Park, Stamford; 2, Simmins' Champion Amateur feeder (given by Lamport Gilbert, hon. sec. Northamptonshire B.K.A), R. Hefford, Broughton, Northampton; 3, 3*s.* 6*d.*, H. Barnes, Barnack, Stamford. Class 2.—1, a guinea hive (given by Lamport Gilbert), H. Barnes; 2, 5*s.*, R. Hefford; 3, certificate of B.B.K.A., C. Honey.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

THE PROTEST AT SOUTH KENSINGTON.

[594.] Allow me to say one word in reply to 'County Secretary' and Mr. Burkitt. The former (576) has not caught my meaning, for I consider it not a 'trifling,' but

a very serious matter to depart in any way from the rules of a schedule. All I contended for was that, in such an exceptional competition, the absence of a cork was a 'trifling matter' to *be made the subject of a formal protest*, and that it would have been better if the protest had never been made. And in reply to Mr. Burkitt (584) I would only say that I did not overlook the words to which he alludes, but that I recognised a difference between 'attractive appearance for the market' and honey 'prepared for market.' There might be, and was most strikingly, the 'attractive appearance,' without corks. But honey in bottles can hardly be 'prepared for the market' without them.

Here I hope the matter will rest. All who know Mr. Burkitt must know that if, as I think (speaking only for myself) the protest was a mistake, the motive which prompted it was excellent, and for the best interests of bee-keeping; and I trust that in some measure his object, as stated in his last letter, will be gained—a revision of the rules—so as to avoid, if possible, for the future, any necessity for 'exceptions to the rules.'—F. G. JENYNS, *Knebworth Rectory.*

'PROMOTION OF BEE-KEEPING AMONG THE YOUNG;' INDUSTRIAL TEACHING.

[595.] Your correspondent, 'B. B.,' appears to think that I am rather hard upon the Government schoolmasters, because I drew attention to the fact that the children in our Elementary schools are allowed a whole holiday on Saturdays. Permit me to point out that I did not suggest that any additional labours should be imposed on the class whom he pictures as already the most miserable and down-trodden of mortals. But I certainly think that an effort should be made to give our children some practical teaching on the Saturdays, if no other time could be found. Might not our girls be taught cookery, house-work, and other kinds of handicraft, by a person specially employed, and not necessarily by the governess?

For many years the School Board in my own locality (as is, no doubt, the case in many other places) has paid a special teacher to instruct the elder girls in cookery, and no part of their work has given greater satisfaction. Could not something of this kind be attempted on a wider scale? A special teacher might be employed to visit a series of schools easy of access from a central point. Two hours' instruction in cookery, or butter-making, or gardening, or bee-keeping, every Saturday morning would surely prove a useful addition to the subjects taught, and would, moreover, render our girls more fitted for the struggle of life. The same argument applies in a greater degree to the boys' schools. Let the elder lads, instead of loafing about the streets, ruining their clothes, and learning little, if any, good, be required to attend for two or three hours every Saturday morning. A local carpenter might instruct some of them in the use of tools. On another occasion they might follow the plough in country districts, under the guidance of an approved and skilful ploughman. In wet or wintry weather, carving, knitting, netting, or special local arts under special teachers, might occupy their attention. If the headmaster were a bee-keeper (as I think he should be) a few fine summer mornings might be devoted to the wonders of the hive. The change of subjects with the sunshine of May or June would do something to drive away that dreadful 'depression' upon which 'B. B.' dwells so feelingly.

The result of this instruction of the hand would be the gradual elevation of the younger generation, and the development of no little latent talent. Our lads, instead of prowling (as they too often do) about the streets at night, would find pleasure in following up some of the occupations they had begun at school, so that the beer-house and the dram-shop would have fewer attractions for them.

Many persons, no doubt, will object to the expense which these additions to our Elementary School *curriculum* would involve. Localities, however, might have the option of enforcing them or otherwise. If in our country districts the girls could be taught to make good butter, we should, perhaps, soon cease to pay the foreigner fourteen millions *per annum* for dairy produce, and thus some of the cost would be recouped. The present knowledge of butter-making in England is very much on a par with the knowledge of bee-keeping in England ten or fifteen years ago. Industrial teaching in almost any subject would enrich the nation, not impoverish it.

The industrial development of Wurtemburg, the result of careful technical teaching—as recently narrated by Mr. Alfred Harris, of Kirkby Lonsdale,—is a warning to Englishmen not to allow their Teutonic cousins to outstrip them in offering every aid to the rising generation in acquiring manual skill as well as head-knowledge.—E. BARTRUM, D.D., *King Edward VI.'s School, Berkhamsted, Herts.*

A WELSH HONEY FAIR.

[596.] Being engaged last week lecturing and judging at several shows in North Wales, I thought that a few days waiting in order to see one of the very ancient institutions of the town of Conway, the Honey Fair, would not be ill-spent; although, instead of, as I thought, having to spend many weary hours 'hanging around,' I was agreeably surprised at the many calls I received from applicants desiring my advice and assistance with their bees: driving, uniting, removing sections, &c., fully occupied my time for three days; and on the evening of the last, I arrived at the very picturesque town, where the fair was to be held on the following day.

Arising early—I hadn't had a wink of sleep since three o'clock on account of the talk of the pastry-cook's men next door preparing for the coming event—I took a morning stroll preparatory for a heavy breakfast, and whilst paying great attention to the same, the first consignment of honey passed my window. I don't know whether the Welsh ladies are the bee-keepers, but it is very evident they are the honey-sellers; and, lady like, they know how to strike a hard bargain. These purveyors of 'Nature's sweets' trooped up the street with their hands full of various sized and shaped cans from those to hold two gallons and downwards, and then arranged themselves in a row along the pavement, placing their tins in front on the kerb. As their numbers increased, forms were provided for their convenience, 2*d.* each being charged as market dues. Well! I thought, this street will be a 'hot shop' for bees directly, and I wasn't mistaken. I watched the first bee arrive; in a short time it became just a trifle lively; there were bees everywhere, hustling, tumbling, fighting, and stinging, in their endeavours to obtain a share of the coveted treasure. Asking the price of honey, I was perfectly astounded at their ideas of the present value, 'Six shillings a quart, sir,' and this measured with the seller's measure, so that you had to put up with the loss of the drainings which, on a cool day, would reduce your quart to about a pint and a half; reckoning 4 lbs. to the quart, your bargain would cost you at the rate of 2*s.* per lb. The honey certainly was of an uniform good quality, although taken from straw skeps: in fact, in only one instance was it different; in this case, it was just honey, pollen, brood, and comb mixed; I did a small lecture to the seller.

The efforts of the North Wales B. K. A., under the able leadership of E. W. Davies, Esq., J.P., was apparent in the fair; bills had been circulated, advising the honey-sellers to keep their tins shut and have a

sealed sample bottle, to show customers. This advice was taken in several cases, and in some others they had bottled the bulk, this sold a deal better than that from the tins. Only two lots of sections were for sale, and they found speedy purchasers, they were the production of the Hon. Secretary of the N. W. B. K. A., and Mr. Berry of Llanwrst. Next season there will, no doubt, be a larger quantity of such on sale, as the inquiries from me were very numerous as to the modern system; when the 'oldsters' saw the ease with which the modern bee-keepers sold their stock, envious eyes were cast on them, and many in my hearing resolved to endeavour to follow in their wake; let us hope they will.

It was past 5 p.m. before the last lot was disposed of, and then the price had fallen to 4*s.* per quart. Bees-wax, of which I purchased nearly all that came in, fetched 1*s.* 4*d.* and 1s. 6*d.* per lb., one lady *wanted* me to give 2*s.*; I needn't say that I declined the offer,—she took it home again. They have a peculiar way of reckoning the value of wax; if honey is fetching 4*s.* per quart, wax is just one half that price per lb. I was asked 3*s.* per lb., the first thing in the morning. The streets were in a deplorable state after the fair, smashed bees in all directions, there must have been enough bees killed by the *gamins*—who seemed to revel in the occupation—to stock two hives. These little gentlemen did not come off 'scot free;' sundry forcible ejaculations every now and then testified to the energy of the bees in the defence of their lives.—W. B. WEBSTER.

THE DISPOSAL OF HONEY.

[597.] I was requested at a meeting of our Committee last week to write to the *British Bee Journal* on this subject. *Not one* of the advertising companies will even quote a price for *extracted* honey; and the prices offered for sections are lower than last, though 1886 seems to be admitted by nearly all to have yielded a much smaller average.

Can you explain the cause? Is it because so much of last year's stock remains unsold? or do the companies find it impossible to retail it?

I always recommend bee-keepers to use in their families a great deal more than they do instead of butter, sugar, jam, &c., and also to make mead, puddings, and tarts, which all seem to appreciate *when* they taste them, but rarely make themselves; and for the sale of small quantities, an advertisement in the *Exchange and Mart* generally secures a customer. (N.B.—In using this medium, take the editor's advice, and insist on prepayment or deposit; *then* there is no risk.)

One of our district secretaries writes:—'How is it that, though so much adulterated honey is known to be in the market, we hear of no prosecution by the B.B.K.A.?'

I do not take a gloomy view myself as to the future disposal of honey, but the matter increases in importance, and the establishment of honey companies and bee shows, honey fairs, &c., has not yet got over the difficulty.

What answer can I give the above queries? This is important, seeing that one of the chief objects of the B.B.K.A.* has always professed to be to afford facilities for the sale of members' honey.—W. E. BURKITT, *Hon. Sec. Wilts B.K.A., Buttermere Rectory, Sept.* 17.

P.S.—The 'Self-opening Tin Box Company's' canisters are invaluable for transmission of honey (from 1 lb. to 20 lb.) by post or rail, as there is no possibility of breakage or leakage, and a piece of tape across the top *sealed at each end* prevents their being tampered with in transit.

[We subjoin copy of letter as communicated to the *Times* some few weeks since by the Secretary of the B. B. K. A., which affords some information on the points raised by our correspondent. We conclude Mr. Burkitt is referring to the sale of this year's produce; and, if so, we consider his remarks as likely to create unnecessary alarm. The dealers have neither facilities nor the capital to store a whole year's surplus produce in the space of a few months after the close of the season. Bee-keepers, like other producers, must be content to retain their harvest and dispose of their stock from time to time as the demand arises; in the meantime using their best endeavours to dispose of their honey at retail prices. We cannot agree with our correspondent that the price of sections is lower than that of last year. Will Mr. Burkitt (and his fellow-countyman 'Wilts') read the communication which succeeds this, mark how honey can be sold, and take courage?

We thoroughly approve of Mr. Burkitt's recommendation of tins for the transit of honey. We would also suggest stone jars of decent appearance, always taking care to label them as 'Pure English Honey from the Apiary of ——'

In regard to the adulteration of honey, we are under the impression that full instructions were given by the B. B. K. A. to every county secretary how to proceed in this matter. If the Wilts Association has followed these instructions we think the district Secretary has a legitimate cause of complaint against the B. B. K. A.

'THE ADULTERATION OF HONEY.—In your issue of the 12th inst. your correspondent, Mr. Jabez Hogg, alludes to the extensive adulteration of honey as now practised by many unscrupulous importers, and asks, "whether it is not worth the while of the English bee masters to make an effort to stop this nefarious trade?" May I remind your correspondent that the British Bee-keepers' Association, aided by its county affiliated branches, has for some time been making efforts in this direction? Until very recently it was the practice of those engaged in the falsification of honey to label their jars, &c., as 'New English Honey,' 'Fine New Honey,' &c.; but finding that such titles clearly brought them within the pale of the law, and that the English bee masters were taking steps to bring them to justice, this nefarious article is now generally labelled as 'Californian Honey Dew,' 'Swiss Table Honey,' &c., and in many cases the jars bear a protecting label, which shields the vendor from prosecution under the Adulteration of Foods and Drugs Act. I fear that this abominable practice will not be stamped out until the British public have more fully learnt the value of good British honey, and to be able to judge of its quality by its aroma, flavour, &c. Generally speaking, it is but little understood that the colour of honey depends upon the sources from which it is collected by the bees, and that much of that which is of a dark colour is quite equal (and in some cases superior) to that which is light in colour; honey collected by the bees from white clover, limes, fruit blossoms, sainfoin, hawthorn, turnip, bean, heather, &c., being of different hues. With few exceptions, the London tradesmen, both in the West and East End, refuse to keep a dark sample of honey on sale in glass jars, even of the best heather honey (hence the drug in the market of the home article of which your correspondent speaks), openly avowing that their customers prefer the jars containing the bright mixture of glucose, &c., made pleasant to the eye by the aid of sulphuric acid and other injurious substances.']

PRICE OF HONEY.

[598.] Flesh and blood won't stand it any longer. Therefore this communication. I have, first from a love of our mutual friend, *Apis mellifica*, and, secondly, from a desire to increase my account in the penny bank, been endeavouring to make a small market for honey. The British public is easily persuaded, and has readily offered to buy, thereby showing a marked improvement upon the hardly-persuaded customers of my brother-chip, 'Wilts,' who tells such a melancholy tale in your issue of September 16th.

Now, Mr. Editor, I advertised for 1-lb. sections, and had numerous replies. I also visited the Colindian Show, and tried to buy. I have also worked this neigh-

* We would add of the County Associations also.—ED.

bourhood well, with the following result:—The highest price asked was 2*s.* per lb., then 1*s.* 9*d.*, then two cwt. at 1*s.* 6*d.*, same quantity at 1*s.* 3*d.*, carriage to be paid by me, with all risks, &c. One lot, which I was asked 1*s.* 6*d.* per 1-lb. section for *at the show*, I afterwards bought at 10*d.*, carriage extra. I had two lots offered at 9*d.*, after I had bought a quantity at 10*d.*, but the description conveyed the idea that they were not of the best quality.

'Wilts' says he could find few customers for 1-lb. sections at 8*d.*, 9*d.*, and 10*d.* each, *retail*. Why don't some of the many grumblers answer advertisements for honey, and quote a price, in character with the complaints in your *Journal*. I imagine that 'Wilts' could take more than a trifle off his retail prices if a customer would take the lot, especially as he has had to give over so much space to show it, and to provide air-tight case, handsome show-card, &c. Last year, I sold in one month two cwt. at 1*s.* 1*d.*, 1*s.* 2*d.*, and 1*s.* 3*d.* The lower price was for lots of 7 lbs. Now, sir, I am not arguing whether 1-lb. sections can be produced to sell with a profit at 6*d.*, 7*d*, or 8*d.*, but any business man will acknowledge that 'Wilts' would have gained by the transaction if he had sold at those prices to one buyer, instead of selling, or endeavouring to sell, at 8*d.*, 9*d.*, and 10*d.* in small quantities, with all the valuable space occupied, and all the necessary small expenses associated with a retail trade, besides the irritation arising from unprofitable, short, 'over-the-counter' lectures.

Up to the time of writing this, I have not received a lower quotation than 9*d.* per lb. for run-honey, though I have tried in many directions—and have orders ready for one cwt. this week—and yet I am continually reading that run-honey does not find buyers at a little over half that sum. I don't want to get an advertisement for honey on the cheap, but I am open to treat for a few cwt. at once at 'grumbling price.'—J. H. B.

'YORK, YOU'RE WANTED!'

[599.] Week by week as I read my *Journal* I become impressed with the good work done by Counties Associations. I read of conferences and exhibitions at which bee-keepers are brought into fraternal contact with each other, giving and receiving advice and instruction, comparing notes of failures and successes, and so on, till the pleasant vision fades away leaving nothing but the hollow reality that 'no such joy awaits us here.'

I have the misfortune (as regards bee-keeping) to reside in Yorkshire, and in every other respect am proud of my county, as most Yorkshiremen are; yet when I look for news as to the doings of the bee-keepers of this the largest area of moorland and pasture in the whole kingdom, in the columns of the recognised official *Journal* such news is conspicuous by its absence. True we have a County Association (at least the report of the B.B.K.A. tells me so). We 'have a king and officers of *sorts*,' and if the bee-keepers of Yorkshire hear of them in no other way it is fitting we should extend our cries in your columns, or metaphorically bury our heads for very shame in the dirty old skeps which veritably *swarm* in Yorkshire to the disgrace of modern bee-keeping. Last autumn a correspondent appealed, p. 372, for news of the County Association through your columns, and as there was no reply I supplemented his request in a subsequent number. Nothing, however, resulted but 'the stony silence of the Sphiux.' Haply we do not enter the temple nor approach the altar with due reverence.

Perhaps if we attempted to propitiate the lethargic gods by an offering in the shape of a subscription, the oracle might speak; but in this eminently practical age it is not wise to manure the tree until one is convinced of its ability to yield good fruit; and (I speak for myself only) I have asked and sought in vain through your columns for some sign. I do not ask for, nor desire, the visit of an expert into our district, the few bee-keeper[s] there are being intensely practical, and in our quiet way we are of mutual assistance to each other (especially in the way of tobacco), but however well the good seed may be sown and good work secretly done by the County Association, have not your readers some moral claim to know something of all this, if only through an annual post-card in the *Journal* telling them whether the supposed defunct be yet alive, or the living almost dead?—R. A. H. G., *Horsforth, near Leeds.*

A LADY'S EXPERIENCE.

[600.] Being a complete ignoramus on subject of bee-keeping I was prompted to begin by visiting an apiary in my neighbourhood last May, till which time I had never seen the inside of a hive, a queen, and had read nothing on the subject till I then got Cowan's *Guide-book*. The aforesaid apiary is conducted on Simmins' principle and his hives used, and from the owner I purchased two empty ones. I ordered the first swarm from a baker in a village near, who brought them to me and hived them one morning, saying they had swarmed the afternoon before but he was unable to bring them at once. I paid him 16*s.* and he went off contented; an hour afterwards not a bee remained, and no compensation to be got from the man! My husband said, 'Never mind, you must pay for experience.'—Loss the first.

I then purchased three swarms through an advertisement in *Bee Journal*, and paid a man to hive them, the local secretary kindly taking a peep to see that all was right; this was July 8th, and we had fine weather when the limes were in bloom, so that a good bit of honey was collected; but the bees were frightfully savage, and whenever I attempted to carry out any of the instructions in the *Guide-book*, I got dreadfully stung, suffered a great deal of pain with swelling, and red streaks and patches coming over my skin, and on two occasions I was so bad I had to remain in bed. Hearing that Carniolans are so gentle, I wrote for a queen to Mr. Benton, and I determined to introduce her by Simmins' system, having purchased his book. Queen arrived all safely; book says, 'Take her to hive,' I did so (in a wine-glass), but when I attempted to 'let her run down' she took flight and I never saw her again, it being dark.—Loss second. No fault of system, but my ignorance.

Discouraged by my own non-success, I then purchased a Carniolan queen from the owner of the apiary I mentioned, who agreed to introduce her and did so most neatly by Simmins' system, and she was laying when next examined, two days after. I then wrote again to Mr. Benton for another. Expecting to receive her at once I divided one of the hives, not become very strong, but had to wait a month for queen; so, afraid to introduce Carniolan to hive so long queenless, I gave them alternate combs from other hive with black queen on one, but the next day they killed, as far as I could judge, all the bees I had given, and, I suppose, queen, as I never saw her or eggs again, and the hive is now queenless and so savage, I do not like to examine again. The Carniolan queen I introduced myself to the other hive, which I had deprived of black queen; I did so by Simmins' system; and, though very clumsy about it, she was laying when I again examined, two days after. As far as I can judge, nothing can be better than the system, which is simplicity itself.

I have become greatly interested in bee-keeping, but my difficulty is *learning*. I have joined the Association, and see the *Bee Journal* when about three weeks old, rather too late to be useful! The local Secretary is most civil, but one cannot be continually troubling him; and at the apiary I speak of, the owner is a busy man, and, though polite, I cannot intrude too often, and am not acquainted with any one else keeping bar-frame hives.

My present position is—two rather strong stocks with Carniolan queens, moderately good; one straw skep,

which appears to be strong; and one queenless stock. I have, in all, spent a little over 9*l.* on them this year, counting losses, foundation, and about 60 lbs. of sugar. Money is an object, and I feel rather disheartened. I have taken only two or three pounds of honey cut from the frames, just to taste, as I wanted the bees to get strong. I hear of people, writing from this neighbourhood, taking over 60 lbs. per hive. I might have put on some sections during the lime-blossoms, but the maker of Simmins' sections, to whom I wrote, after keeping me waiting nearly four weeks, sent other sections at last; and as it was too late then to put on, I returned them, and received my money back.

I cannot wonder at cottagers failing to adopt bar-frame hives. No doubt they are most profitable to those who understand them, but I take my own case as a beginner: I have given my best energies and thoughts to the subject, read everything I could come across, spent what, to me, is a large sum of money, and to a cottager would be a small fortune; I wear a veil, but I am sure it would be a very determined cottager who would face the bees as I do. I am unable to leave home or run up to bee shows, and, of course, neither would a cottager be able to do so; and, though from books one learns a great deal, I feel that what I require is practical instruction. A visit from an expert once or twice a-year, which I am promised, will no doubt be useful, but not everything; and I fear that in my position a cottager would be justified in feeling discouraged; and thinking that, if he does not make 100 per cent out of his skeps, they are no trouble, little expense, and some profit.

I should mention that I live in a flowery neighbourhood with a large orchard opposite, but I do not look forward to next year with any confidence, as I do not see how I am to learn, and I find what sounds so simple in books very difficult to carry out; for instance, 'Find the queen, and remove her.' It took me 1¾ hours to find a queen; I got seven stings on my hands while doing so, though very cautious and gentle; and the bees were clustered so thickly on the frames that I only found her at last by separating the clusters of bees with a feather dipped in carbolic mixture. I should give up bee-keeping at once, but that I am interested in it, and also do not like to be beaten.—AN ENGLISH NOVICE.

[There is no royal road to knowledge, but with a brave heart it may be gained at last.—ED.]

MORE *v.* LESS LIGHT.

[601.] There is a consensus of opinion in favour of feeding bees at dusk, so that the labour of honey and pollen-gathering during daytime may not be interrupted, but continued by the taking down of syrup during the night. The chief reason, however, against daylight feeding is, lest the excitement set up in a hive by a supply of food result in an exodus of bees on a search expedition, fighting and robbery following in its train.

This rule of evening feeding is distinctly questioned by a friend of mine (a thoroughly practical bee-keeper), who tells me that on this point books are misleading, his experience being that bees fed at noon are thus stimulated into a wider search for food, the excitement coming to an end by dusk, whereas by following the *rule*, thousands of bees are stirred up by the commotion of the feeding bees, and rush out towards any light in the vicinity, never to return, excepting, perhaps, a few which may come round if the following day be genial. This view stands to reason as well as the rule does, and, what is more, is borne out by facts.

What bees I have are at the moors along with those of two friends, but I kept a late swarm in my garden for observation, and this lot I am stimulating up at half a pint of syrup each evening, when all is quiet. Every night there is a commotion and search on the alighting-board. Last night at half-past eight (quite dark) my friend called to see me, and encountered bees flying about the garden and the windows of a room with gases lit and blinds undrawn some twenty yards away. This morning I find the front of my house dotted by chilled bees, and how many were on the houses in the village, or off on a '*voyage à la lune*,' goodness knows. I have neighbours and neighbouring gas-lamps, and just now, on clear nights, the moon shines brightly, so no more night-feeding at present, for there will be no stocks in this district to rob for a fortnight, and even then strong stocks can defend themselves; a few score slain being also a less evil than thousands lost. By the irony of fate, I am the first to ask for an editorial dictum.—R. A. H. G., *Horsforth, near Leeds.*

[We have never observed the effects of night feeding to which you refer. When carried on during the spring and autumn, the nights are too cold as a rule to admit of bees leaving their hives, and we cannot think that any appreciable loss results therefrom. If, however, top-feeding is practised, and colonies are fairly strong, feeding may be carried on both by day and night, at all seasons of the year. Our experience of robbing differs materially from yours, since, during the last fortnight, or more, our own and neighbours' bees have been given to marauding most vigorously. We consider it bad policy to stimulate the queen to breeding at this late period. Bees hatched late in October are worse than useless.—ED.]

BEE-KEEPING IN GLAMORGANSHIRE.

[602.] The Glamorganshire Bee-keepers' Association applied to the B.B.K.A., to send some one to act as expert in the bee-tent at various shows, give lectures on beekeeping, and visit apiaries of their members; and I was deputed by the committee to fill the office. The G.B.K.A. are quite in their infancy, but, judging from what I saw of the capabilities of the county for producing good honey, I look forward to their taking a high place at the next County competition.

I left home on August 10, and my tour lasted till August 19. During that time I attended shows at Cardiff, Aberdare, and Bridgend, gave a lecture at Neath, examined three candidates for third-class expert (alas! I could only pass one), and visited several apiaries in the neighbourhood of the above places, and also at Swansea.

At Cardiff there were no prizes offered for honey, but a small quantity of very good honey was offered for sale; but the bee-tent was crowded during the whole afternoon, and very great interest shown in bee-keeping. The usual lecturettes were given, artificial swarming demonstrated, &c., &c. Unfortunately before the show began, one of the reporters was stung, and as he belonged to the Liberal paper, it gave an opportunity to his Conservative colleague to dilate on the constitutional feelings of the bees, though, judging from their behaviour at swarming time, it is rather a limited monarchy.

On August 12, there was a very successful show at Aberdare, as far as honey was concerned; but the bee-tent was more or less of a failure, as the show was held in the market-place, and the tent had to be erected in a dark corner with a roof overhead. The bees would not drive properly, and it was very difficult to see the queen.

Another year I would suggest that the tent be erected in some field close by, or if it must be held in the market-place, that arrangements be made for having the hives for manipulation placed in some field close by some days before the show, and erecting the tent in the open space in the market. The hives could then be brought in as they were wanted; and during the manipulation any stray bees could find their way back. This plan could not be carried out this year, as the only space available would have blocked up a passage leading to the flower show.

The honey shown was good in quality, but some of

the sections were very much disfigured by a too liberal supply of lace paper around the edges. If an edging is used at all it ought not to be more than a quarter of an inch in width, as it only increases the labour of judging if the defects are concealed.

In the wax class an amusing incident occurred. By some mistake the cards were marked second and third instead of first and second, the colour of the third cards being very similar to the first. When the mistake was rectified, the exhibitor who had obtained the second prize scratched it out and put first! I should have removed all this competitor's exhibits from the show.

There were several entries for the best kept hive of bees within a radius of three miles, and as each and all had to be visited it naturally took up a good deal of time. This class might be judged by the local committee, or a selection made by them of the best three or four, as there was a great disparity in the hives shown in this class.

At the public luncheon there were the usual speeches, and the importance of bee-keeping in connexion with agriculture, and more especially fruit-farming, was referred to by several of the speakers.

On August 16 I gave a lecture at Neath; there was a small but very attentive audience. Lectures are very dry, especially for the audience, and I think that private demonstrations as suggested by Mr. Watkins (*B. J.* 413), are preferable during the summer months. In the winter, with a good supply of bee-furniture, &c., a lecturer may be able to keep some of his audience awake, and advance the knowledge of bee-keepng.

On August 18, the bee-tent was at Bridgend, and everything went off most successfully. There was only a small amount of honey shown, the prizes not being valuable enough to tempt exhibitors from any distance.

The G.B.K.A. has all the elements of success, but what is wanted is organization and concentration. What has proved successful in other counties would have a like result in this case, to concentrate their energies on one big annual show, having small local shows as before. If this annual show could be held in conjunction with the Agricultural Show, each part of the county would have it once every four years, and there could be no cause of complaint that one town was favoured at the expense of the others.

In the same way the committee might meet in turn in different centres, and with efficient local sub-committees, very few meetings of the general committee need be called. An expert should of course be engaged, as soon as the funds will permit, and his annual tour should commence in one part of the county one year, and the next year this part would be visited last.

The hospitable reception that I met with would make it invidious for me to mention any in particular, as each and all did their very best to make my tour most enjoyable, and I shall always have very pleasant recollections of my first visit to South Wales.—G. WALKER, *Wimbledon*.

HIVES AT THE HEATHER.

[603.] Many of your readers will be interested to read some late 'experiences' on the above subject, and may perhaps be able to sympathise with me. On July 30th, I carted off my apiary (three stocks) to the heather, six miles away, a lovely spot with half a square mile of apparently fine food close by. Two of the stocks were very strong, having produced about 40lbs. a-piece before the end of July; the third, a late swarm but strong: all in bar-frame hives, of course, and troublesome to move. I got them there safely, placed them in a sheltered spot, fitted on section crates, and packed all away snugly. After a five weeks' holiday, what was my dismay to find no stores—all the sections just as empty as I had left them! And so the last act—the crestfallen apiarian carting his three stocks home again, and forking out many shillings for the job.

I may add another bitter 'experience' if you have room. I offered a rustic to drive all his condemned bees, paying him a shilling a stock. By the aid of a skilful friend I secured five stocks. One was a very weak lot with only some half-finished combs: so we, thinking to utilise these, drove the other four into an empty skep one after another and lumped them into the weak lot. This accomplished, we carried them home slung on a stick: I comforting myself on my acquisition, and knowing that I had a nice strong lot. Imagine my horror when, after a hot three-mile walk, we found that the combs had (naturally enough) broken away and saturated the bees, which all fell out in a sodden mass on to the grass. Every effort to revive them has failed; I tried them before the kitchen fire, and also in the sun; and of the handful of bees and two bedraggled queens rescued, I can now find no signs, though I shut them up at once with some brood, and kept out robbers.

One word, in conclusion, to your correspondent, 'Wilts' (581). Is there not a too general opinion in this country that honey is a luxury, and too dear for ordinary consumers? When we can sell a pound of honey for the same price as a pound of jam, we shall get a market quickly enough.—SOUTH BUCKS.

ERRATUM.—P. 443, col. 2, line 17 from top, *for* 1*l.* 12*s.* *read* 2*l.* 12*s.*

Review.

GUIDE DE L'APICULTEUR ANGLAIS.—Par Th.-W. Cowan, F.G.S., F.R.M.S., &c. Traduit par Ed. Bertrand. Ouvrage orné de nombreuses gravures. Nyon (Suisse), chez Edouard Bertrand, et chez J. Huckle, Angleterre.

Mr. Cowan's *Bee-keepers' Guide-book* is too well known to British bee-keepers for us to expatiate on its merits as a practical guide to the study of bee-keeping. We are pleased to note that one of the most advanced Continental bee-keepers, M. Bertrand, President of the Société Romande d'Apiculture, having been struck by the sterling worth of this work, the excellence of its directions, and the clearness and conciseness of its style, conceived the idea of translating it for the benefit of the readers of his *Revue Internationale d'Apiculture*. The translation has been faithfully rendered, and the original engravings have been reproduced. We hope the work may prove as great a success in the French-speaking portions of the Continent as it has done in this country. We may say that there is already a translation of the *Guide-book* in the Swedish language; and we have just received a letter inquiring whether it had been translated into the Spanish.—G. H.

Echoes from the Hives.

Woore, September 9th.—On September 7th I drove two stocks of bees, brought them home and united them in a frame-hive; examined to-day at noon, found queen laying, and all going on all right.—J. S. L.

Hill Wootton, Warwick, Sept. 16th.—The season has been very indifferent here. Have no swarm from a straw hive. I have taken a fair quantity of comb honey in the season. The floor-board on which the hive was placed having two strips of wood, about 1½ in. thick, caused a space between the bottom of it and the top of the stand it was placed on. When the honey was taken off the hive was covered with some loose material which hung down below the floor-board on three sides. I removed these to-day, and was surprised to find the space under the floor-board crammed with soil. On lifting off the hive to see the cause of it, I found the soil tunnelled in all directions, but nothing alive made its appearance, but on stirring it about I found it occupied with a colony of ants. The soil must have been carried up by them the height of about 15 or 18 inches, and sufficient to fill half a gallon measure. We

had scarcely any wasps about here all the season. What few I have seen have been the last three or four weeks, and very small, evidently quite young. A young man told me a few days since he had destroyed more than twenty nests at a very little distance from each other. They were generally in plantations where he was employed. My opinion is they were destroyed by the cold, unfavourable weather we experienced in May, when they had left their winter quarters.—G. F. PERKINS.

Somerton, Somerset, Sept. 20th.—Honey season over sections scarce and poorly filled, and honey only medium crop in most places round here. Bees are being killed by thousands, they get into grocers' and confectioners' shops, and into the mineral-water makers' places after the syrup, and getting to the windows worry themselves to death, which is grievous to see; but I cannot see how to help it. It will be a serious matter for some hives if it continues long. Wasps are very scarce, I have not seen half a dozen.—J. I. S.

Honey Cott, Weston, Leamington.—In looking over stocks preparatory to getting them ready for wintering, I have found several that are short of food in brood nest, and after sections were taken off (the brood being nearly up to top of frames) there was no more honey gathered after it had hatched out, so that to make them safe they required to be fed. I have introduced a few queens by direct introduction, but not with full success; in one case, I fear, the queen got killed by robbers, when I examined the hive. I have introduced several queens this year, by laying a bit of perforated zinc over the feed-hole, and then a bit of wood about three inches square and half an inch thick, with an inch and half hole bored in it. This is laid over the zinc, and when the queen is put in, a bit of glass is laid over, also putting a bit of candied honey in so that the queen can feed herself; then, in a couple of days, gradually draw the zinc, so that the bees can come up to the queen, and she can go down, if I think they seem all right towards her, they generally take to them all right; there is no disturbance caused by opening the hive. I have fairly succeeded by this plan, with the exception of two that I found dead before the end of two days, as I always look at them the next day and give them a little more candied honey.—JOHN WALTON.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

R. L. RICHARDSON.—*Bees taking down Syrup.*—1. If you remove the queen, leaving brood in the hive, the bees will take down syrup and store it, but, minus queen and brood, they will not do so. 2. *Introducing Queen.*—We advise you to change queens at one manipulation, when the bees return from the heather. Select a fine day and there need be no fear of chilling brood. Cage the new queen for twenty-four or forty-eight hours.

W. HUGHES.—*Red Clover and Bees.*—1. We have seen, many times, Ligurians, Cyprians, and Syrians—and the various crosses of these races—at work in large numbers upon the *second* crops of red clover, and have known them to collect from it honey in large quantities. The quantity of pollen collected is small and of a dark greyish brown colour. We have also, at times, noticed black bees at work on this plant, but never in large numbers, and have never known them to store surplus from it. 2. Answered under 1. 3. All races of domesticated bees collect honey and pollen freely from Trifolium incarnatum.

TREF EGLWYS.—1. *Judging Honey.*—Nothing definite has been arrived at up to the present as to points of judging sections. Well filled, few pop-holes, regularity of cells, smooth surface, and last but not least, colour. Here lies the stumbling-block: some preferring very light colour, others of a decided saffron tint, others dark. My preference is for a colour approaching as nearly as possible to a rich amber hue when looked at with the light shining through. 2. *Obtaining Sections.*—This depends in a great measure on the bee-keeper himself. Mr. A. does not get as much or as nice-looking honey as Mr. B., although they both live close to each other. Strong colonies having full sheets of foundation carefully and truly placed in the sections, exceptionally good pasturage, is the *sine quâ non* of exhibition sections. 3. *Queen Introduction.*—Queen introduction again! Read the numerous letters appearing lately in this *Journal*. No plan is perfectly infallible. 4. *Huber's Method.*—Huber was quite correct. I have introduced several this year without a single failure; but Mr. Simmins' plan is much less trouble. 5. *Queen Rearing.*—An answer to such a query would occupy the pages of a fair sized book. Read Alley on queen-rearing, or any of the publications on advanced bee-culture.—W. B. WEBSTER.

F. GOLDSMITH.—The piece of comb forwarded affords no symptoms of foul brood. The death of the immature brood occurred through a want of sufficient heat to induce vitality.

EAST KENT.—*Queen Present.*—The bees having killed off the drones, there is presumptive evidence that a queen is present, even though there may be no brood.

DISTRICT HON. SEC.—It is very unusual for bees to visit peas, yet they do nothing invariably; the bees that were seen covering the peas were gathering from them either honey or pollen, and such an act should be noted.

J. METCALF HART.—*Fungus or Pollen?*—We are pleased to hear that you have assured yourself that your bees have not contracted any disease, but that the foreign substance was pollen.

J. B. S.—1. *Queen-cells.*—There is no necessity for cutting out the commenced queen-cells; the bees will reduce them. 2. *Queen-Introduction.*—If you are able to get young fertilised queens now, they may be introduced at the present time. 3. The sample of enamelled-cloth will be found serviceable. 4. *Syrup with Mould.*—The mould being at the top, may be skimmed off; and if you re-boil the syrup, it will not injure the bees. 5. *Sugar.*—We do not recommend beet sugar for dry-sugar feeding. Use raw, such as Muscovedo, Porto Rico, or Barbadoes.

MEAD.—We reprint the receipt for making mead by Mr. E. Thompson, of Brigg:—'To every gallon of water put 4½ lbs. of honey, to which add one ounce of ginger in pieces and one ounce of hops, tied in a bag, to about five or six gallons. Boil and skim it an hour. Let it stand till cold, then put it into casks, with a pint of brandy to every six gallons. N.B.—No yeast must touch it.' A correspondent, under the *non-de-plume* 'Sunrise,' supplied us with the following recipe for making white mead:—'Take a gallon of honey and eight gallons of water, and boil it well, till it comes to six gallons; then pour it into a large vessel of earthenware, let it stand till it is almost cold, and then put into it a little yeast, to work it. When it has worked a while, put it into a rum cask, and stop it close. Let it stand two months; then bottle it off, and put into every bottle two cloves and a little lemon-peel. This receipt is almost one hundred years old.'

H. L. WORSHIP.—The death of the brood was not the result of foul brood. Their death was caused by the hive not containing a sufficiency of bees to cover the immature bees in their last stages. At the same time it would be advisable to put a piece of camphor in the hive.

HALF-PECK OF BEES.—You would require to have about twenty pounds of sealed stores to maintain the bees during the winter.

E. DIAMOND.—*Foul Brood.*—The comb forwarded was most unmistakably affected with foul brood. Though you have taken very effective measures, by burning hives, combs, &c., there is great danger lest your other hives should be troubled with the same complaint, as you have noted that they partook of the honey from the infected hive. Procure a bottle of Cheshire Cure, and act according to the instructions thereon given.

*** *Some queries having arrived too late, will be attended to in our next; also several communications.*

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Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.

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Editorial, Notices, &c.

CANADIAN AND BRITISH BEE-KEEPERS.

The great outstanding feature in the bee-world of the year 1886 will undoubtedly be the two large displays of honey which have been exhibited in the Indian and Colonial Exhibition by British and Canadian bee-keepers. The chief purpose of the former was to prove to the British public the capabilities of their country to produce honey, excellent in quality and exquisite in flavour, in such quantities as to supply all their demands without the necessity of having resort to foreign countries. They were induced to make this display from having been informed that their Canadian brethren were making strenuous efforts to send over to the Exhibition a large quantity of honey with the view to create a market for the honey-produce of their country. The British bee-keepers have had their opportunity of showing the quality of their honey, and right well have they taken advantage thereof, and now the Canadians hold the field, and we sincerely trust that they may be successful in their remarkable enterprise, and that they will be enabled to have in Great Britain an outlet for their surplus produce of honey. We believe that this honourable rivalry between the two countries will be productive of good results, and that in future honey will be sought for as one of the great necessities of daily life of the British public.

These two shows would not have been complete had there not been an opportunity afforded to British bee-keepers of giving a right hearty welcome to those who by habits and pursuits have so much in common with them, and of both comparing their modes of management of their 'mutual friend'—the honey bee.

We are pleased, therefore, to reprint the following circular showing the arrangements that have been made by the British Bee-keepers' Association :—

By the kind permission of the Royal Commission of the Indian and Colonial Exhibition the British Bee-keepers' Association purpose holding, on Wednesday, October 6th, a special meeting of welcome to the Colonial bee-keepers now staying in England. It is desired to make this meeting as representative as possible, and all County Secretaries, County Representatives, members, and friends, are earnestly requested to join with the British Bee-keepers' Association in giving the most hearty reception to their brother bee-keepers from the more distant parts of the Empire. The following is the programme of arrangements :—

12 noon. Quarterly Conference of the Representatives of County Associations, to be held in the Lindley Library Room, adjoining the office of the Royal Horticultural Society in the main entrance.

2 p.m. Luncheon will be provided in the Quadrant adjoining the Albert Hall; tickets, *3s. 6d.* each, can be obtained of the Secretary of the British Bee-keepers' Association, for which application should be made at once. At the close of the Luncheon a special visit will be made to the Canadian Exhibition of Honey, situate in the Colonial Provisions Market.

5 p.m. A Conversazione will take place in the Conference Room, situate near the main entrance to the Exhibition, when the subject of bee-keeping at home and in the Colonies will be introduced, and by the interchange of ideas as to the various systems of management, hives used, the comparison of results, &c., mutual benefit may be gained by all.

Members are requested to bring their microscopes, and bring or lend other interesting and useful appliances in connexion with bee-keeping. Such objects should bear a legibly written descriptive label in order to make them interesting to visitors. Members should give immediate notice to the Secretary of their intention to contribute such objects.

Free tickets of admission to the Indian and Colonial Exhibition, enabling Members of the British Bee-keepers' Association and the Members of the County Affiliated Associations to be present throughout the day, may be obtained upon application to J. Huckle, Secretary British Bee-keepers' Association, Kings Langley.

Early application must be made for tickets to the Exhibition and for tickets for Luncheon, as the Committee are called upon to guarantee a certain number to the Luncheon.

The attendance of ladies both at the Luncheon and the Conversazione is requested.

From much previous experience of what we may call the 'clannishness' of bee-keepers, we feel assured that the proposed meeting will be enthusiastically entertained, and that they will muster in large numbers on this most interesting occasion.

Notice of this meeting has been sent to every member of the British Bee-keepers' Association, and also to every Secretary of the County Associations. The Secretaries of the County Associations have been requested to give publicity to this event to their representatives. Any member of a County Association wishing to attend the meeting should make application for tickets direct to the Secretary of the British Bee-keepers' Association, J. Huckle, Kings Langley, Herts.

THE CANADIAN HONEY EXHIBIT AT THE COLONIAL.

When you, Mr. Editor, went on your voyage of discovery for the products of the honey bee at the Exhibition in June last, of which you gave us an account in *B.B.J.* for June 24th, you rather doubted my oft-repeated assertion that '*Mel sapit omnia*,' but I am more and more convinced of the fact.

I have seen the Ontario honey exhibit. '*Mel*' is '*omnia*' there. It 'sweetened' the *Pall Mall Gazette* of the 17th instant; reporter, interviewer, engraver, *et omnes*. If the British public is not similarly affected it is not the fault of Mr. Jones and his coadjutors, or the staff of pretty girls behind their counters. Their winning smile and request to 'have a taste' are captivating, backed up as they are by that most insidious of lusciousness—*mel*.

The exhibit itself is most distinctly 'Canadian.' I rejoice that it is so. It is no copy of our own late show, which was equally pronounced 'British.' The shelves are arranged around the building in tiers, with a large promenade down the centre. The largest half of the bulk staged is in tin vessels, put up in true Canadian style, the labels being very similar in general appearance to those that surround the tins of lobster and salmon with which we are so familiar. They vary in size considerably, some as small as 1 oz., but the 1-lb. size largely predominates. There is a good quantity of 1-lb. bottles, with metal screw covers, and cork 'wads' underneath, but they are not air-tight. The sections are, as far as I could judge by the eye, all of one size, viz., $5 \times 4 \times 1\frac{1}{2}$. There is not a single $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ section in the place. I am very pleased to record the fact. It keeps the two nationalities distinct. I do not mind entering the list Canadian *v.* British under such terms half so much as if the two were identical in appearance. The sections are a very beautiful sample of comb honey, as good as eye could wish to look upon. There are 'pop-holes' and unsealed cells—a goodly number in one here and there—proving that Canadian bees are but '*mortal*.' But having said so much, I confess the lot would be hard to beat; but by the side of these sections, beautiful as they are, our own 1-lb. has the stamp of stability and solidity that is the well-known characteristic of all things 'British.' I saw no 2-lb. sections. The run honey is very pale; the greater portion of it paler than the Cheshire exhibit at the late South Kensington show by many shades; in fact, it is a very pale straw, not the least dash of amber in it. The sections are evidently filled with a similar grade, as they show perfectly white when held against the light; but none of the samples I have yet tasted have an aroma and piquancy approaching our own native honey. Evidently our own flora is more diversified, which, to my palate, greatly improves the flavour, a pure *white* clover honey being in my judgment insipid.

We can learn a 'wrinkle' or two from our cousins. They have the right kind of saleswomen, who go about their business in the right kind of way. No reflection is intended on any one, most of all on our late great chief, but what would a few such girls have got through at the Healtheries? Herts sold all their honey at our late great show in the Conservatory mainly through the pushing business instincts of their stall manager. I am not undervaluing the assistance Mr. Seager and a few of the county members gave him, and I know at the last hour the residue was cleared off by the wholesale dealers; but apart from that I may venture to assert Herts sold retail more than the other ten counties combined. It is the highest compliment I can pay the rev. gentlemen; they are welcome to it. Clergymen are indifferent shop-keepers. But what our 'honey fairs' require is good saleswomen that look business.

The Canadian exhibit gets a fair sprinkling of visitors, but not the throngs to be seen in many of the other courts. Their position is not the best, and might have been improved if it had an open front similar to the provision stalls adjoining, but I am certain no stone will be left unturned by those in charge to make it a success, for as I walked through the process of 'sweetening' the minor officials by the aid of '*mel*' was in full operation. —AMATEUR EXPERT.

CHAPMAN HONEY PLANT.

We are informed by Mr. Dobbie, the author of *Bee Pasturage*, that he is in treaty with a Continental seed firm for the purchase of a quantity of the Chapman Honey Plant seed, for distribution amongst bee-keepers, and will advertise it when received.

In Memoriam.

Mr. James Anderson, bee-master, Dalry, Ayrshire, died on Thursday, the 23rd inst., at the mature age of seventy. The deceased was well known in England and America, as well as in his native country, as a bee-master and a trusted authority. He often said that he did not well know when he began to keep bees, but it must have been over fifty years ago. His father before him kept bees, so he would have the advantage of early training. He took the front rank as a successful bee-keeper on 'the Stewarton-hive' system, and along with Mr. Ferguson and Mr. Sword went to London in 1874 to the Crystal Palace Show, where they together exhibited over half a ton of honey, all in Stewarton boxes. In the second volume of the *British Bee Journal*, p. 90, we find it is recorded that 'the pride of the show came from Ayrshire in octagon Stewarton supers about four inches deep. Truly it was a pleasure to look at them, and a treat in itself to see how the art of the bee-master could induce the bees to build their combs so beautifully straight, so even on both sides, and so perfectly finished that they looked as if they were made in a mould to pattern. No one could fail to admire the perfection in packing shown by the Ayrshire gentlemen who had brought their immense harvest over four hundred miles of railway almost without breaking a single cell.'

Mr. Anderson took an active part in 1875 in forming the Caledonian Apiarian Society, and almost ever since then has done yeoman service either as an exhibitor, a manipulator, or a judge. His aim ever was to make everything with which he had to do a success, and he gave his services ungrudgingly to any cause which he espoused.

About four years ago Mr. Anderson visited America, and spent nearly a year there visiting the various bee-masters and examining their various systems. He received a hearty welcome wherever he went, and was designated by some of our American friends, 'The Bee-King from Scotland.'

The deceased was of a quiet and amiable disposition, with a touch of dry humour which made his conversation delightful. He had a true Scotch independent spirit, was honourable in all his dealings, and was ever ready with open hand to assist a friend. He contracted a severe cold about three weeks ago while on a visit to Arran to see his bees, which brought on congestion of the lungs. He leaves one daughter (who resided with him) and two sons, in America, to mourn his loss. He will be long remembered by a large circle of friends and acquaintances.

ASSOCIATIONS.

WARWICKSHIRE BEE-KEEPERS' ASSOCIATION.

This Association, which has accomplished some excellent work during the seven years of its existence, was again represented on the show ground, the numerous exhibits of bee furniture and appliances being staged within a large marquee. The general management of this tent was placed in the capable hands of Mr. C. W. Summerskill, the well-known 'expert' in the matter of bee-culture. We understand that the number of members belonging to the Society has of late rapidly increased, there being at the present time no fewer than 500 upon the books. Among the many curious things on view were several unique specimens of bee furniture, and the samples of honey were pronounced excellent. In the course of the afternoon of each day 'driving competitions' took place in the bee tent, and for these prizes were offered by the Association. Interesting lectures upon the management of the bees were periodically given in the manipulating tent by Mr. Summerskill, of Hockley Heath, Birmingham. The Secretary of the Association, Mr. J. Noble Bower, of Knowle, was unfortunately prevented from being present in consequence of indisposition. The prizes to the successful exhibitors were distributed by Lord Leigh, the President of the Association, at four o'clock. The prize takers were as follows:—

Bees.—Stock of Ligurians, or other foreign bees: 1, Abbott Bros; 2, J. Walton. Stock of English bees: 1, C. Redshaw; 2, J. Walton.

Hives.—Best hive on the moveable comb principle: 1, T. B. Thompson; 2, J. Howard; 3, S. J. Baldwin. Best and most complete hive on the moveable comb principle, for cottagers' use (price not to exceed 10s.): 1, A. T. Adams, 2, F. Ayling; 3, J. H. Howard. Best frame-hive for general use, the work of an amateur or cottager: no award.

Supers.—Best rack containing 1-lb. or 2-lb. sections: 1, Messrs. Neighbour and Sons; 2, Abbott Bros. Best rack containing 1-lb. or 2-lb. sections, suitable for cottagers, to be exhibited ready for use upon a straw skep: 1, J. H. Howard; 2, T. B. Thompson.

Honey.—Best exhibition of super honey from one apiary: 1, J. Walton; 2, W. S. Pridmore. Best twenty-four 2-lb. sections of honey comb: no award. Best twenty-four 1-lb. sections of comb honey: 1, J. Walton; 2, W. Sells; 3, Abbott Bros. Best twelve 2-lb. sections of comb honey: 1, T. Bond; 2, H. Wood. Best twelve 1-lb. sections of comb honey: 1, W. S. Pridmore; 2, H. Wood; 3, W. H. Coldwell. Best super of honey: 1, no award; extra prize, W. Sells. Best exhibition of run or extracted honey, not exceeding 50 lb.: 1, W. S. Pridmore; 2, J. Sunderland, bronze medal; 3, A. T. Adams.

Cottagers' Class.—Best exhibition of honey in the comb, taken from one hive, without destroying the bees: 1, B. P. Walton, certificate; 2, W. Woodward. Best twelve 2-lb. section of comb honey: 1, B. P. Walton; 2, D. Ingleby, silver medal. Best twelve 1-lb. sections of comb honey: 1, B. P. Walton; 2, G. Cooper; 3, T. Grosvenor.

Extra Prizes.—Given by Mr. J. W. Johns, Mr. W. Tyrer, and Mr. Thos. B. Thompson: no entries.

Miscellaneous.—For the best collection of hives and bee furniture: 1, Abbott Bros.; 2, W. P. Meadows. For the finest samples of pure bees' wax: 1, A. T. Adams; 2, J. Walton. Driving competition: 1, T. Sells; 2, J. Walton. Amateurs (veils and gloves allowed): 1, T. Bond; 2, W. Woodward.

DERBYSHIRE BEE-KEEPERS' ASSOCIATION.

An exhibition of bees, honey, and appliances was held in a tent on the Recreation Ground on September 8th and 9th, 1886. There was a larger and better display in all departments, showing the progress which bee-culture has made of late years under the fostering care of the Society. There were eleven entries in the bee-class, all of which were of considerable merit. The honey was greatly improved both in quantity and quality. Several of the specimens were remarkably good, particularly that in Class 5, for produce in either sectional, comb, or run honey, or all three combined, and open to all classes. The centre table was occupied by designs, that by Mr. J. W. McNally bore the following inscription, worked in honeycomb: '1886. Honey Bee Culture.' Mr. H. Ward, of Paradise Street, Lichfield, had sent two well-worked designs, one representing the Staffordshire Knot, and the other having an inscription, the word 'Honey.' Hives and appliances were another interesting feature of the show, several valuable and desirable improvements and alterations having been effected in this direction. Bee-driving competitions were conducted in an adjoining tent on both days. Altogether the show was in advance of last year. Much credit is due to the courteous and energetic Secretary, Mr. W. T. Atkins, and Mr. Councillor Holbrook, the steward. The awards made were as follows:—

Bees.—Bees, of any race, in Observatory hives: 1, A. Simpson, Mansfield, Woodhouse; 2, W. Handby, Hasland; h. c., W. Wilkes, Church Broughton.

Honey.—Super honey (sectional or otherwise), the produce of one apiary, 1886: 1, W. Handby; 2, A. Simpson. For the best twelve sections: 1, W. Handby; 2, A. Simpson; 3, R. Williamson, Shirley, Brailsford. Honey, raised by bees of any member of D.B.K.A.: 1, R. Williamson, Shirley; 2, H. Richardson, Shottle; 3, H. Wood, Lichfield. Run honey, in class jars: 1, H. Richardson; 2, A. Simpson; 3, J. J. Shipman, Ashover.

Bees' Wax.—1, J. J. Shipman, Ashover; 2, A. Simpson, Mansfield Woodhouse.

Cottagers' Classes.—Run honey: 1, T. Wilson, Ashover; 2, E. Toon, Etwall; 3, James Stevens, Breadsall; 4, G. W. Deakin, Clowne. Comb honey: 1, J. Rowland, Holbrook; 2, T. W. Jones, Etwall; 3, G. W. Foster, Brailsford. For the best wax: 1, G. Waterfield, Shottle; equal 2, G. W. Foster and T. Wilson. For the best frame-hive: 1, W. Handby, Hasland; 2, J. Evans, Darley Dale; 3, D. and A. Cooper, Derby. For the best hive, made by a cottager: 1, J. White, Old Tupton; 2, G. W. Foster. The best super for harvesting honey in the comb in a saleable form: 1, W. Handby. For the best collection of hives and appliances: 1, W. Handby; 2, D. and A. Cooper. Collection of hives and appliances for extracting honey: 1, W. Handby.

Bee Driving.—Class 1, open to all comers: 1, Mr. Simpson, of Mansfield Woodhouse; 2, Mr. Richardson, of Shottle. Class 2, open to cottagers: 1, Joseph Rowland, Holbrook; 2, C. Fearn, Church Broughton; 3, G. W. Foster, Brailsford. The certificate of the Derbyshire Bee-keepers' Association for bee driving was awarded to Mr. W. Coxon, of Ambaston.

The judges were Mr. T. S. Goodall, of London; Rev. George Shipton, Brampton Vicarage; and Mr. E. C. Walton, of North Muskham, Newark.

HONEY SHOW AT HAWKSHEAD (AMBLESIDE), LANCASHIRE.

The first annual show in connexion with the newly-formed Bee-keepers' Association for Hawkshead and district came off in the Town Hall. The judges were two well-known local connoisseurs, Mr. Whittaker, Belmont, and Mr. Isaac Thompson, of Bowness. The process of awarding the premiums was carefully and conscientiously entered into, and in some instances it was difficult to decide as to which was the best. This was especially the case in Class D, for one-pound sections, where the exhibits of Mr. Thomas Bell and Mr. John Abbott, junr., both of Ambleside, were very even; but after each noticeable point had been taken into consideration, the first prize was awarded to the first-named exhibitor. There were seven dishes of honey displayed on a separate table, which were not for competition. The following are the awards:—

Class A.—Best super of honey: 1. William Carter;

2, Thomas Walker; 3, Isaac Postlethwaite; h. c., James Rogerson; h. c., Miss D. S. Heelis. Class B.—Best bar-framed super: 1, James Postlethwaite; 2, John Burrow, senr.; 3, James Leviston; h. c., James Postlethwaite. Class C.—Best sectional super: 1, Thomas Bell; 2, James Leviston. Class D.—Best one-pound sections: 1, Thomas Bell; 2, John Abbott, junr.; 3, James Leviston. Class E.—Best straw hive of honey: 1, John Burrow, senr.; 2, John Burrow, senr.

THE NORTH OF SCOTLAND APIARIAN SOCIETY.

This Society opened its second exhibition in the Music Hall Buildings, Aberdeen, Friday, September 10th, and was largely patronised by bee-masters and others. The promoters have been very zealous in furthering the object originally contemplated, namely, the fostering of bee-culture in the northern counties of Scotland, and it is gratifying to learn that their efforts in this direction have been rewarded with a reasonable amount of success. A strong point of the exhibition was the sections of comb honey, the judges having considerable difficulty in arriving at a decision. A very interesting feature was the heather and clover honey, the former presenting the appearauce of dark port wine, and the latter that of pale sherry. But, as regards taste, there was not much difference. Bread flavoured with honey also formed a part of the exhibits. Perhaps the most important feature was that of the hives, and the various specimens shown reflected much credit on the mechanical ingenuity of the inventors. The judges were: for honey—Mr. Bellairs, Mr. Hugh Raitt, Blairgowrie; and Mr. Cockburn, Cairnie. For appliances—Mr. Gordon, Mains of Gartly. The following is the prize list:—

Best display of honey, extracted and in comb: L. Tait. Best super of honey, not being a sectional super: 1, R. M'Gregor; 2, W. Ross; 3, D. Alexander; 4, J. Tough. Best super of honey, in straw only, not less than 10 lbs.: 1, R. M'Gregor; 2 and 3, W. Rae. Best twelve 2-lb. sections of comb honey: 1, W. Munro; 2 and 3, J. Tough. Best twelve 1-lb. jars of extracted or run honey: 1, A. Cadenhead; 2, D. Lyall; 3, G. Brown. Best sample of run or extracted honey in glass jar, not less than 10 lbs. weight, heather honey: 1 and 2, J. Simpson; 3, W. A. Morrisson; h. c. W. Ross. Best twelve 1-lb. sections of comb honey: 1 and 2, W. Munro; 3, G. Brown; h. c. F. Stewart; c. J. Tough. Best twelve 2-lb. jars of extracted or run honey: 1, C. Carnegie; 2, G. Brown; 3, D. Lyall. Best sample of run or extracted honey, not less than 10 lbs. weight, clover honey: 1, W. Munro; 2, C. Carnegie; 3, Rev. Mr. Innes. Best mead, or beer, made with honey, not less than two quarts, with recipe attached: 1, Mrs. Michie, jun.; 2, J. Simpson. Best honey-flavoured cake, with recipe attached: 1, Mrs. Michie, jnn.; 2, Mrs. J. Ogg; 3, J. Simpson. Best collection of honey-flavoured articles, as food and liqueurs: 1, Mrs. Michie; 2, G. B. Black. Best collection of hives and bee furniture: 1, G. Brown; 2, A. Cockburn. Best observatory hive: 1, F. Stewart; 2, R. Macgregor; 3, G. Jack. Best sample of wax: 1, J. Tough; 2, A. Duncan; 3, W. Rae; h. c. and c., J. Simpson. Collection of the best honey-producing flowers, with descriptive list attached: 1, G. J. Black; 2, G. Jack. Best heather-honey extractor or press: 1, W. P. Meadows; 2, G. Jack; 3, G. Brown. For the best essay on bee-keeping, having special reference to the industry as applicable to the north of Scotland: 1, Mr. Black; 2, Mr. Jack; 3, Mr. E. Douglas.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

The autumn show of the above Horticultural Society was held on 8th September in the Saint Andrew's Halls, Glasgow, and was a decided success. In laying out the exhibits a new and much-improved system was adopted, the whole of the large hall being occupied with tables of exhibition plants and the finer classes of fruit, such as grapes, peaches, melons, &c. Cut flowers were laid out in the octagonal hall, and vegetables in one of the lesser halls. A new feature in connexion with this show, and one which deserves special mention, was the grand display of honey, bees, &c., from the apiaries of Mr. William McNally, Glenluce, Scotland. The exhibit occupied 18 ft. × 3 ft., consisting of supers, sections, run honey in bottles, miniature bell-glasses, and the letters 'Scotia,' which was awarded first prize at Dumfries, 1886; first prize, Stranraer, 1886. This new feature in bee husbandry was very much admired by the spectators, many of them wondering how bees could be made to work out letters in honey-comb so neat. An observatory hive was exhibited at one end of the display in working order, showing the queen busy at work. Many were the inquiries about this thing and that thing, but the courteous way in which Mr. McNally explained any mystery earned for him a welcome return to another show in Glasgow. His honey was mostly heather, the entire quantity being about 700 pounds. The recent floods in the south of Scotland, carrying off roads, bridges, houses, workshops, bees, &c., prevented Mr. McNally from bringing forward a much larger display. The judges awarded the following special award of merit. 'William McNally, Glenluce, Wigtonshire. An exhibition of honeys specially commended as much for the excellence of the exhibitor as the special attention which he has drawn to what can be accomplished by patience and careful observation. The various samples are highly appreciated by those best qualified to judge, and his example can be emulated by many, thus providing additional and profitable industry.'

Mr. McNally owns the largest apiary in Scotland, and has been a most successful apiarian, winning prizes at all the leading shows for the last five years. He disposed of all his honey during the day to one firm at a good remunerative price, and sold 'Scotia' to a Glasgow firm for to be exhibited at their head shop at a high price.

DUMFRIES SHOW.

We have been requested to insert the following corrections in the prize list of the show held in Dumfries:—

Class 1.—Best specimen of British bees: 1st & 2nd, Richard McNally; 3rd, James Johnstone. Class 7.—Most serviceable hive for general use and transmission to heather: 1st, Warnock & Walker; 2nd, Richard McNally; 3rd, Wm. McNally. Class 31.—Extractor or press for heather honey: 2nd, Richard McNally. (No first prize.) There were also entered for this class: John Hamilton, Wm. Young, Wm. McNally, and John D. McNally.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SOUTH KENSINGTON SHOW.—PROTEST AGAINST PROTEST. (584.)

[604.] We, who are members of the Lancashire and Cheshire Bee-keepers' Association, do not so much object to the protest of having violated the corking rule, made by the Hon. Sec. of the Wilts B.K.A. (inasmuch as it appears that *all* the exhibits, including the Wilts,

would have been disqualified had the rules been strictly adhered to), as to his obnoxious and utterly uncalled-for innuendo that the honey shown by our Association was not contributed by at least ten members, and must also have been previously mixed in order to be of such uniform colour. I would kindly ask the Hon. Sec. of the Wilts B.K.A. to suppose that our members would scorn such trickery, and that we (both lay and clerical) are equally conscientious with our southern brethren. The honey *was* contributed by *more* than ten members, in different parts of the two counties of Lancashire and Cheshire. It was *not touched* (except to be wiped and staged), after it reached the hands of the sub-committee appointed to receive it. It is a fact that the honey in this neighbourhood, if not so plentiful as last year, has been of such fine quality, and so even in colour, that the judges at our local shows have had the utmost difficulty in making their awards. One said to me lately, 'I hardly know how to give the three prizes for the run honey, and if I had gone further in awarding I must have written on every other exhibit, "Very highly commended."'—J. F. Buckler, *Member of the Sub-committee of the Lancashire and Cheshire B.K.A., Bidston Rectory, Cheshire.*

P.S.—May I ask all experienced bee-keepers whether it is possible, by mixing prime and inferior honey together, to get an exhibit of uniform excellence?

SHOWS.

[605.] Most of us who have had much experience in judging will cordially endorse the opinions expressed by Mr. Seager. There is no doubt that the demand exceeds the supply as far as judges are concerned, and the result is that incompetent judges are selected.

When I was judging in the Isle of Man last year, I had to judge in public, and was often asked my reasons for my decision. This is a very good education for the judge, as well as for the public, and I believe it is the rule at agricultural shows. If this plan, however, had been followed at Reading, Mr. Seager might still be judging there. The plan I have followed, I think with some advantage, is to give my reasons for my decisions after I have finished my judging. At a show some time ago, where I was judging, I heard that a bee-keeper who had often acted as judge made the remark that he would have disqualified the exhibit to which I gave the first prize. I took an early opportunity of discussing with him the points in judging, and soon found that his views on judging were not those generally received. If some general rules and regulations could be drawn up, as advised by Mr. Seager, it would lighten the labours of judging, but even then we are brought to face with the cork difficulty.

The judges at the Colinderies were carefully selected by the Committee, and have had great experience in judging, but in spite of the able letter of Mr. Jenyns, I think they were wrong. The paragraph was badly worded, as it is quite open to a double interpretation, but if they disqualified in one class, they ought to have disqualified in all. It would have been a lamentable fiasco no doubt, but if judges are to be allowed to ride rough-shod over all rules and regulations, where will it end? We may have a prize which is given for the best smoker given instead to the best twelve 1-lb. sections. In matters of taste the decision of the judges should be final, but in matters of fact I think an appeal should be allowed to the committee.

The following case came under my notice: A prize was offered for the best twelve spring-sown onions, and the prizes were awarded. The man who took the first prize confessed that some of the onions were autumn sown, but he had deceived the judges by mixing with them some which were grown in pots, and which are very difficult to distinguish from autumn-sown onions. Nevertheless the decision of the judges was upheld, but wrongly in my opinion. If a protest fee had to be lodged in questions of fact, when it was contended that the rules and regulations had been broken, if the protest was allowed, the reversing of the decision of the judges would not be derogatory to them, as their opinion is not called in question.

Another plan would be to have a staging committee, and throw the burden on them of seeing if the rules, &c., had been complied with; but even this would only partially solve the difficulty, as protests are generally lodged after, and not before, the decision of the judges. I should like to see in every schedule the decision of the judges shall be final except where it can be proved to the satisfaction of the committee that the rules and regulations have not been complied with.

Again, I agree with Mr. Seager that some system of points for judging honey, &c., is advisable. If some general instructions could be drafted by the B.B.K.A., and then sent to every county Association for consideration, we might get some general opinion on various vexed points (granulated honey, drone comb in sections, &c., &c.), and then any show could be held under the B.B.K.A. rules, or with the exception of certain clauses.

So long as the same exhibits take different places at different shows, when judged by different (or indifferent) judges, so long must be their grumbling. It is impossible even in this mechanical age to make judging purely mechanical, but some reform is needed, and the sooner the better.—Geo. Walker, *Wimbledon.*

HIVES AT BEE SHOWS (573).

[606.] Mr. Wren was quite correct in his remarks on p. 409, when he said that my uncapping machine, as exhibited at South Kensington, was by no means perfect or complete. It was explained to the judges that it was exhibited to show that a machine constructed on this principle, with fixed knives between which the frames containing honey-combs were to be passed, would properly uncap both sides of the comb, without bruising it, ready for the extractor. In fact, simply to show the cutting power of the knives arranged, and about this they appeared to be satisfied. Any one could see from the odd pieces of wood of which it was made, that it was only the very roughest of models, there not being time to properly work out the details of the machine before the show. I did *not* understand that Mr. Wren considered I was not entitled to the medal.

On p. 430, letter (575), Mr. Wren quotes from letters received from *successful exhibitors*, one of them complains that 'The uncapping machine was removed from the Colonial Show some days before the Exhibition closed, which was a violation of the regulations.' I must ask you to allow me to explain the circumstances under which I removed my machine after having first obtained the permission of the Secretary to do so.

I was told by a friend of mine that two persons, one of them an enterprising manufacturer, had been closely examining my uncapping machine, and that this person had said he could see how he could improve upon my machine. Now, as it was my intention to patent it, I thought I would lose no time as this gentleman might steal a march on me and be first at the patent office. It is now provisionally protected, and the number is 10314.

In due course, I hope to send an illustration and particulars of the machine to the *Journal*.—John M. Hooker.

CURIOUS EFFECTS OF STINGS.

[607.] I was walking in the garden near my hive a few days ago when a bee got entangled in my hair, and stung me in the face, close to my right ear. I had the sting extracted, and did not trouble at the moment much about the matter, but in about ten minutes I felt

my lips getting uncomfortably thick, accompanied with intense irritation of the scalp, and on examining my face through the medium of a looking-glass, I was alarmed to find it very much inflamed, the veins in my forehead swollen, and my eyes bloodshot. I was then conscious that the irritation I first felt in my head was extending over my whole body. I divested myself of the whole of my clothing, and found that my skin was covered by an irruption resembling that produced by being stung by nettles. The irritation was most violent, and I could scarcely keep my fingernails from making abrasions in my skin. All this happened within half an hour from the time the sting was extracted. After the irritation had somewhat subsided, a feeling of sickness and general lassitude supervened, which lasted till I retired to rest. Next day I felt stiff and sore in the muscles. I have been stung dozens of times this season and last, but they have never affected me in the manner described above.

Now, Mr. Editor, I do not wish to alarm others by describing symptoms which were far from agreeable, but I consult you as my medical adviser, and respectfully ask you to prescribe a remedy in case I should have another attack.—Silurian Caerleon.

[A similar case to the above will be found on page 235, vol. xiii., with instructions how to act, and a recipe for a lotion to be applied to the parts affected. It is known in medical language as *Urticaria* or nettle-rash.— Ed.]

CURES FOR BEE-STINGS.

[608.] Numerous cures have been put before the readers of the *Bee Journal*, such as wet soil, wet whiting, wet soda, wet blue, it is all wet; and as some of our bee friends always suffer, I would recommend them to try cold water: either immerse the part, or apply it with a piece of flannel, it is nearly always at hand, and I have found it most efficacious wherever it has been tried. Of course it must be done at once, as the poison soon makes its way into the system.—Lincolnshire.

THE PROMOTION OF BEE-KEEPING AMONG THE YOUNG.

[609.] I have been waiting some time to see if anything practical came of the Rev. F. G. Jenyns' paper at South Kensington on the above interesting subject. I would suggest something like the following. My proposed plan is to form a club of young men or youths, paying, say, 6*d*. per week, and at the end of the year they would each possess a stock of bees, to manage on the ground of the club.

We are trying to get a plot for the purpose, and a friend and I will take our bees there, and give lessons to all members at stated times. After they have gained an insight into the nature of bees, let them learn to handle them, to give confidence. Also, if any members have bees already, they may bring them and work them under the supervision of the instructor, and before their fellow-pupils. During this winter we purpose to give, in the parish room, or some place to which we may find access, some lessons with combs and frames, describing the beginning and growth of a stock from February to May, and the means to be taken to get them strong for work. Then they can see it in practice on the ground in the spring and summer, with the means to promote swarming or non-swarming, as each pupil may desire to increase in stock or honey, together with the management of a small apiary.

If, as I trust, we are successful in starting this club, we shall have about twenty-four stocks on the ground. The plot we are trying for is a triangle between two high railway banks (thirty-six feet), one on the north-west, the other on the east, while on the south is the River Mole, the whole forming just the place for an apiary. Our only trouble would be the floods on the lower part of the plot, to avoid which we should have to keep our hives up on that side.

I should be glad for any suggestion from any correspondents, and help from the Surrey Bee-keepers' Association in the work. I have the promise of some pupils.—R. Siggery, *Leatherhead*.

[The idea is very good. It would be necessary to formulate some rules. We should advise you to obtain the rules of the club started by Miss Eyton, adverted to in our last week's issue.—Ed.]

QUEEN INTRODUCED TO HIVE WITH QUEEN-CELLS.

[610.] In reply to 'Tref Eglwys,' my experience is that after caging a queen the usual forty-eight hours and the bees are still hostile to the alien queen, queen-cells may be looked for, but they are not so early capped over. If the queen be now re-caged in a pipe-cover over one of the open queen-cells containing an embryo, she may be again released in about twelve hours. In passing, I may say that there is no occasion to expose the bees or combs, so as to endanger the queen flying out when released from pipe-cover, if the frames are quietly parted and the cage pushed partly off comb with a knife or screwdriver. I have no failure to record after caging on open queen-cell; and, probably, if capped cell was broken open, and cage placed thereon containing the desired queen, she may be successfully released in twenty-four hours. Have lately succeeded in the introduction of a number of queens by process described on p. 434 by 'Amateur Expert.'—J. R. W. Hole, *Tarrington, Ledbury*.

QUEEN-INTRODUCTION.

Rev. G. Raynor *versus* Huber.

[611.] On p. 367 the following statment is characterised as utterly absurd, viz., 'If a colony of bees have no queen, and no means of rearing one, they will invariably accept a fertile queen when presented to them;' moreover, certain inferences are deduced, which, to say the least of them, are really the absurdities—and for the purpose of testing the statement 'of Huber,' an unnatural and unfair experiment is devised. It is a pity poor old Huber is not yet alive to vindicate his words and to give one or two lessons on queen-introduction, which has been occupying considerable attention for some time past in your columns. I am sure he would at once say his 'introduction' means something far different to what the Rev. G. Raynor understands and states; furthermore, most likely Huber would simply say, 'If the old queen dies, or happens an accident to cause death after all eggs and brood were hatched, then a fertile queen, artificially placed or naturally alighting at the flight-hole, would invariably be accepted, and in every case the introductions should be conducted upon natural lines as far as possible.'

In the spring of this year I placed a fertile queen in the midst of a frame of queenless bees. After a few minutes the frame was returned to the hive. The bees had been queenless the whole of the winter. The greatest joy was easily seen amongst the whole of them, and the stock is now one of the best in the apiary. I read with wonder the suggestion that Huber would include such ridiculous conditions as mentioned and suggested by the Rev. G. Raynor. Before the art of queen-introduction is perfect, the book of Nature must be studied a little more closely, instead of making such misleading experiments!

From very careful investigations, microscopical and personal, of the leading and greatest naturalists of the day (practical and scientific), as well as from my own, I

came to the conclusion that failure in queen-introduction of foreign alien queens arises—first, to loss of fertility, brought on by the disturbance and conveyance of a long journey and exposure to a low temperature; secondly, by trying to unite such queens to an alien stock under unnatural conditions; and, thirdly, by imperfect means. Loss of fertility in queens may be occasioned in some cases unaccountably, and with the greatest care this cannot be avoided with some foreign queens; indeed, entire loss of fertility, or egg-laying condition, will sometimes so happen even with the best or very greatest care—hence, no charge or blame can be laid to the exporters of foreign queens. Also, a stock of bees may sometimes become abnormal in the twinkling of an eye, and persistently refuse an alien queen not after their own mind or necessity, when the introduction is carried out by the most successful methods of direct introduction.

What are cages for, but to prevent immediate destruction of alien queens, more particularly those of importation? to enable the bees to become acquainted with the alien queen as far as possible? to enable the queen to become acquainted with the bees, and acquire the peculiar scent of the hive? to recover the vigour she has lost on journey? to be brought back to original egg-laying condition (this is a great point, as bees hardly discern a queen in an unstimulated, or gone-back state, from one about whose fertilisation there was no doubt)? to enable the bee-keeper to remove queen-cells, and leave the bees no alternative but to accept or die out? in fact, to enable the bee-keeper to manipulate the hives according to the highest state of perfection of the present system of modern bee-keeping?

Safe introduction may be easily guaranteed, but no one can guarantee fertility will be brought back in all cases by any method of introduction, before queen-cells are started and bees get a mania for rearing a queen after their own sweet will.

There cannot be much doubt that caging in a wire cage large enough to hold a standard frame of hatching brood can be greatly objected to (the frame or comb to have a hole through which the queen and young bees may pass to either side), as this enables the queen to be inspected at any time, and enables her to fill empty cells with eggs, so no time is lost, &c. The other frames could then have queen-cells removed, to avoid all disputes with alien queen and bees. The most rational method is to get bees in the condition of a natural swarm, by driving and placing queen in midst, which method Mr. Raynor well describes; and, doubtless, the great heat generated brings back the condition of the alien queen, which she may have lost; but perhaps the large cage would enable most apiarians to discover the state of the queen in the quickest manner.

I feel it is a pity Mr. Raynor suggests such an unnatural experiment to try the statement of so great a naturalist.—T. Bonner-Chambers, F.L.S., *London*.

PATENTS RELATING TO APICULTURE.

[612.] *Re* Mr. Hooker's list of patents, I think a short description, with illustration of every fresh apicultural patent, would be interesting to your readers, and might prevent unpleasant misunderstandings amongst traders. I fancy that some of the patentees, like Mr. A. I. Root, the American, will repent afterwards, because they have wasted their money patenting apparatus long in use. If Messrs. Woodhury, Cheshire, &c., had patented their hives, &c., I fancy bee-keeping would hardly be as advanced as it now is.—G. Stothard, *Welwyn*.

BEES KEPT IN LONDON (586).

[613.] I notice under the above heading Mr. Firth of South Kensington has taken 63 lbs. of sugar honey (?) besides two frames of 9 lbs., making an average of 37 lbs a hive from his two hives, and leaving enough to winter on. Now, this to me, in this bad season, seems most astounding, the more so as he says there is not a field of clover within miles. London, indeed, must be a wonderful place for honey, for here, twelve miles away, where there are fields of clover and avenues of limes, we cannot this year get more than 20 lbs. a hive. Last year a bee-keeper in this neighbourhood got 95 and 107 lbs. from two hives; this year he gets but 20 lbs. from each. I, myself, last year averaged more than 50 lbs. from all my hives, whereas this year I have not got 20 lbs. per hive. As all bee-keepers know, bees will, if honey runs short, attack other things (even ripe fruit, as many of us experienced some years ago in a very bad honey year, 1875, but this is a last resource and they will never do this if they can get anything in the shape of sugar). What, then, more likely than that Mr. Firth's bees have been helping themselves to the innumerable sweets in the shops and sugar-refineries that abound in London, as witness on p. 399 of the *Bee Journal*, and, moreover, the honey gathered in London is always described as of a beautiful golden colour, which would be the case if it were taken from the sources I suggest? Now, I ask, is this fair? of course, we all know bees are robbers, and if allowed to gather from their master's flowers only, very few would survive; but robbing from other people's gardens and fields is a very different thing from robbing from their shops; nor have the unfortunate shopkeepers any remedy, which makes it doubly hard.—E. H. Oldham, *East Barnet, Herts.*

A BEE IN HIS EAR.

[614.] Our Cornish friends rejoice in their croaking bees, and chuckle over the ignorant multitude who do not know what they mean by a bee in a 'pop dock;' though when they proceeded to enlighten us it turned out that they were not quite sure about it themselves.

We have all heard, too, of 'a bee in a bonnet,' and have spoken of it so often that we no more think of what we are saying than when we wish good-bye to a friend. But has any one heard of a man with a bee in his ear? Yet this actually happened to a relative of mine this summer. As a friend was carrying in some sections two bees flew at him, one got into his hair and was knocked off, when the other went straight into his right ear. He could feel it pushing its way further and further in, and could also hear it buzzing. His friend would not believe it, not being able to see anything of the bee, and declared it was only imagination.

After a couple of minutes my relative neither felt nor heard the bee and went to his room to dress, when again he felt it pushing its way back. After a few seconds it remained quite still, but every now and then he could feel a tickling sensation. At last he could bear it no longer, and getting a fine pair of forceps he very soon pulled out the bee without having been stung. Altogether it must have been in his ear from twenty minutes to half an hour.

It is not long ago since we were told on the authority of an old physician that the wax in the human ear was a sure protection against insects, but in this case it does not seem to have been of any avail.—T. F. L.

WHY SO FEW COTTAGERS KEEP BEES.

[615.] This is a question one often hears asked at almost every show, and sometimes surprise is expressed in the papers, and I have heard such answers as these: 'Cottagers do not care for the trouble, or they have not the time or inclination.' Now I feel sure this is not so. I for one, and I daresay there are numbers of others who take in the *British Bee Journal* and read all they can about bees, in fact, love them, and would keep a lot of them if it was not for the real reason, the outlay. We know that a swarm can be bought for ten shillings, but then there

is ten shillings for the hive; and I should like to know how a cottager is to spare a pound for bees, when it is taken into consideration that a quarter of his wages go for rent, and with the remainder he has to provide himself, wife and usually three or four children, with all necessaries. Perhaps some admirers of the little busy bee can tell us how it is to be done, or propose some solution to this question, and by so doing would help on bee-keeping among cottagers.—ONE WHO WOULD BE A BEE-KEEPER.

FIRST-CLASS CERTIFIED EXPERTS.

[616.] 'John Peel' wants to get a first-class certificate, so does my friend Hodgson. My first acquaintance with the former was at a show, where he was judge in a 'driving competition'—what extra lustre he expects from the parchment I am at a loss to conceive. He will get the certificate if he tries, but I rather fear Hodgson will get 'plucked.'

A good sort of fellow is my friend, Hodgson; he is not brilliant, but he has great 'staying powers.' I never knew him to be beaten with any practical matter that he took in hand. He seldom 'slings ink;' it is not in his line, the veriest tyro at bee-keeping may beat him at that: not that he does not know what he has proved good in practice, but he is not clever in saying it, and one of the rankest duffers that ever squashed a bee may beat him in the columns of the *B. B. J.*

Hodgson has been in the bee-tent; he can talk in a quiet, homely sort of way, and his advice is of the right sort. He won't cram you with natural history, nor attempt to dazzle you with scientific phrases, but he will tell you how to manage bees under every and any circumstances, and it will always be his own personal practice, not what he has read. His quiet way of manipulating is good to look upon. He is so thoroughly sting-proof that he never fears a sting, and consequently seldom gets one. He don't light his pipe as he enters the bee-tent, nor tuck his trousers inside his socks, and he would scarce disguise his contempt for you if you went into the bee-tent to manipulate and did so.

He has kept bees for many years; not so many stocks as to have to 'rush' over them, nor so few as to constitute a limited range for observation; from fourteen to twenty stocks is about the size of his apiary. His employment is such that he is always amongst his bees, consequently the least unusual activity is sure to attract his attention. Years ago he could tell me of strange vagaries that he had observed, that are now often chronicled by others. When thoroughly practical bee-keepers were scarce he used to go out sometimes on short spring tours as expert, but he was not a success in that capacity; in fact, no one was more conscious of his unsuitability than himself. He eventually refused to go, even to oblige our late great chief, much as he revered him. He was too plain-spoken, flattery is no part of his composition; humour a whim or fad he would not, even for a lady. 'Excuse me,' said he one day to a bee-keeper whose bees he was examining, 'you had better in future confine yourself to bees in straw skeps or keep none at all, for the way you keep them now in bar-frame hives is a loss to you, and no credit to the Association!' Candid! His hon. secretary got a rough time. But his advice is much sought after. I often take a run over to see him, and he has always something of interest to show and to talk over, and he knows the history of each hive and their queens as if they were his children.

When in a caustic vein, he will give amusing allusions to the state of some people's apiaries who are high in authority, about people who write a lot of gush, but never get a section worth looking at; of others never packing theirs up for winter, although they have formulated an elaborate plan of winter packing for the benefit of their inexperienced (?) neighbours; of others, again, whose praise of a certain hive has been sung throughout the world, yet they have never got a shilling profit from that particular kind of hive for four or five seasons. Of brood-spreading and spring-dwindling he has more than one good tale to tell; and his story of a first-class expert who asserted there was no foul brood in a certain apiary that positively stank with it, is good to hear from his lips.

All races of foreign bees have been under his care; foul brood he has had badly on two or three occasions, and long ago blamed the imported queens for bringing it. He is a prize-winner, he makes most of his own appliances, and he is not a dealer, but with all his knowledge and experience I feel certain he will never get a first-class certificate. Some one in authority had suggested that he should try, hence the conversation on the subject. Nothing short of first class would satisfy him, and that I warned him he would not get.

'You know how far I am a bee-keeper, and so does plenty others,' said he.

'But,' I replied, 'a first-class certificate is no test of being a first-class bee-keeper, nor does it follow that you shall get one on that account. It does not depend on your knowledge of practical bee-keeping, but on your power of answering the questions put to you in a way *suitable to the judges.*'

This seemed to astonish him. He began to draw comparisons that were not very flattering, so I put a few questions to him on my own account.

'At what age do you supersede your queens?'

'Not after two years, certainly; you know it would be madness to do so. Look at that four-year-old queen in that hive now.'

'But I am not one of the examiners, remember, and it is heterodox not to do so, so you would lose all marks at that. You know what is taught about doubling?'

'Yes! and pretty good teaching too, and so is preserving old combs, and extracting from them, and so getting your extracted honey charged with the dry fæces of the bees. Some will tell you it is grains of pollen, but we know better. There is nothing to beat the old Woodbury super-bars for extracting from now, after all the new fashions.'

'More heterodoxy! You are not getting many marks yet. But I will try you once more: What is a *Quincunx?*'

'I don't know, nor do I very much care; it has nothing to do with bee-keeping.'

'Good; I will give you full marks for that answer. But come now, seriously, how would you set out an apiary of, say, twenty hives, on a piece of ground so that all of them face south, and all are equal distances from each other?'

'Just as I should plant it with cabbages,' was his reply, pointing as he spoke to his rows set in the orthodox fashion, with the plants in the alternate rows, 'breaking joint' with those in the others.

I explained to him that he had been practising for years what he treated with such contempt under a classical name.

'Now will you please to give me your explanation of the word *Par-the-no-gen-e-sis?*'

'Now I *know* you are fooling me! I did think you serious.'

'Don't get crusty; I am sincere. It has something to do with fertile workers.'

'Ah, well! I might know what you meant if you talk English, but as for that——what do you call it?—I'll ask Canon Fairfield, our Rector, and I'll bet he does not know; nor the Squire either, and he is an Oxford man. If it is practical bee-keeping I am open to take all the judges you like to bring, but as to that *rot* I fail to see what that has to do with it. But I manage to make bee-keeping a source of pleasure as well as profit,

and that is more than many does that use such fine terms of expression.'

'But, Hodgson, my good fellow, that fact does not count any marks for first-class certificates. The spirit of the school inspector is abroad; his office is not to discover how much real useful knowledge the candidates possess, but to keep down the grant. This may be good for the taxpayer, but it is hard on the other parties concerned. Leave the parchment to those who value such things, and from henceforth, like myself, be content to be an—AMATEUR EXPERT.'

CARRYING DRIVEN BEES.

[617.] The death of the bees which 'South Bucks' deplores was due to suffocation. To put the contents of five skeps, probably about 10 lbs., into one, and carry them three miles on a hot day, would be certain to lead to it. The presence of the combs did not greatly contribute to the disaster, as the bees could have escaped the running honey. But the crowding, the heat, the jolting, and the short supply of air entering through the canvas, were fatal. Boxes having perforated zinc on opposite sides so as to permit a current of air are far better than skeps for carrying bees in.—F. LYON.

FEEDING BY DAY OR BY NIGHT.

[618.] My experience is quite opposed to that of 'R. A. H. G.' The light from my sitting-room window shines directly upon the entrances of hives being fed at night at a distance of ten to fifteen yards. I never at this season find the bees attracted to the light, neither do they fly to it when I go among them with a lamp, although the entrances are alive with fanners. I can tell at a glance in the morning any hive which has not exhausted its portion of food by the excited state of the bees, while those which have emptied their bottles are quiet. On warm nights in summer I have frequently to close the window to prevent bees entering and burning themselves to death at the gas. I believe these to be late arrivals home, attracted or dazzled by the light, and so led astray from their hives to which they were returning.—F. LYON.

Echoes from the Hives.

South Cornwall, Sept. 27th.—It is some weeks since I sent an 'echo.' Had I done so at any time during the summer it would only have been a repetition of the prevailing note. At the end of June and the beginning of July we had less than three weeks of prime bee-weather, but since then the conditions necessary for the production and the gathering of nectar have been most unsettled. Even during harvest time there were continual fogs, and a lack of bright sunshine. So the returns are unfavourable. The season is perhaps less than an average one. For myself I cannot complain of the result in super honey, but the produce from body hives is small. Others who have worked for run honey show fair results; last year we did well in both. For nearly two months bees have made no advance; for two or three weeks they have been eating stores. That queens have had little stimulus from an income of honey is shown by the very early cessation of laying. Of many hives which I have examined I have found brood in two only. One of these was *such* a hive. I went several miles to try and put it to rights, and found it choke-full of samples of apiarian appliances—ten frames, two sheets of excluder-zinc, a hanging crate and a dummy before and behind, and on top a crate of thirty sections! These latter were empty. In the body-hive there were a couple of well-filled seams, but others looking fairly well at top were tangled below in a heart-rending manner. Another hive had quite a pretty arrangement of undulating seams under the upper bars, but to detach a frame one had to cut through three if not four of them. It is really cruel to set up a frame-hive and leave it to take its chance. Experts are to be got without much difficulty now, or at any rate bee-keepers who can give a few useful hints so as to avoid disheartening complications. A season with so few swarms is hardly remembered in these parts by the oldest cottager.—C. R. S.

Fort Etna, Limerick.—Having seen that several Irish bee-keepers have given a very poor account of bee-farming this year, I feel it my duty to give a word of encouragement to beginners. There is no doubt this year was very discouraging to some. The spring was so late that we had no honey coming in until late in June. Apple-blossoms were a failure, so were limes; clover was our staple blossom, it was plentiful this year, but the weather was so cold that some days the bees could not get any honey; but on a hot day it was surprising the amount of work they did. I had only eight hives, which I had strong for the honey-flow, as I stimulated and spread brood as much as possible. I worked my bees on the non-swarming principle for section honey, but as I could only put on three crates (sixty-three sections), I did not make as much as I might. I am sure if I had two on that they would have been finished; they were so crowded on the three crates and fourteen frames that they built combs from the roofs. In spite of all this, I got 519 sections and 98 lbs. extracted sections from eight hives, making an average of 77 lbs. per hive. I sold the section-honey at 9*d.* per 1-lb. section, and the extracted at 6*d.*; so I think I fared very well for this year, not having any heather near. I sent my sections in spring crates to Dublin without any breakdown. I would be quite content if I can do as well next year, but I live in hope, and am increasing my stocks in the hope of better days.—ALBA.

[We have received several 'Echoes' from various parts of the country testifying to the very general paucity of wasps this season, which we need not reproduce.—ED.]

NOTICES TO CORRESPONDENTS & INQUIRERS.

E. P.—I. *Combs from Foul-broody Hives.*—You cannot ensure the entire destruction of the bacilli germs by any process of disinfection. You can only prevent their propagation in the bodies of the bees by feeding with syrup containing Cheshire Cure, or, as some say, by placing lumps of camphor in the hives. 2. The germs have no power of locomotion, but are carried about on and in the bodies of the bees. 3. Boiling will destroy them.

J. B. S.—*Suspected Drone-producing Queen.*—As you find drone-caps to the brood, and the queen has a deformed wing, there is no doubt of her being unfertilised, and therefore a drone-producer. She must be replaced at once.

S. H.—I. The conversion of food into brood by Cyprians in autumn has been frequently noted by apiarians, their brood-producing powers being so great; we have sometimes experienced the same with Ligurians. 2. Punching holes in a screw-top bottle is nothing new.

W. E. H.—*Driven Bees spontaneously Uniting.*—This is not at all unusual, especially when the stocks stand upon a bench and not on separate stands. A similar case occurred with us a few days ago when two lots purposely united, one having the queen picked out, united themselves to another lot, so that all three were together. They were brought home in a box, with perforated zinc top and bottom, no fighting took place and no deaths. It is very unusual for bees without combs to fight. We should think the cause of death was suffocation, probably during the journey home, although not noticed at the time.

COTTAGER.—*Failure of Heather Harvest.*—Your experience is similar to our own. When taking bees on a common of several hundred acres of heather in Surrey we were surprised to find the stocks so light, and moreover at the absence of the familiar aroma.

C. T. G. GILBERT.—The queen forwarded did not appear, when microscopically examined, to be diseased. She was an exceedingly good specimen of a queen so far as reproductive organs were concerned.—F. C.

A. K. B.—*Chaff-Cushions.*—The chaff sold in shops is composed of hay and clover. Wheaten straw is preferable to oaten, the former being the cleaner.

WISEACRE.—*Certificate.*—If you are a member of the Yorkshire Association you should give notice to your county secretary that you were desirous of being examined, such notice should be given very early in the year. Mr. H. L. Rickards, of Poole, near Leeds, the Yorkshire Secretary,

would make the necessary arrangements with the B.B.K.A. You can obtain the various papers relating to these examinations upon application to the Secretary of the British Bee-keepers' Association, J. Huckle, Kings Langley, Herts.

S. R. H. G.—*Excluder.*—You do not mention whether the condemned bees were put on combs, or expected to build their own. It is probable that robbing caused them to desert the hive. Keep on the queen-excluder for another week, and guard against robbing. We do not advise the excluder to be kept on through the winter.

F. S. S.—*Wintering.*—The 28th of September is late for taking off sections and extracting. Bees ought by that time to have commenced their winter's rest. Much, however, depends upon the weather. If fine and warm you may extract from the outside frames and return them to the hive, and after two or three days insert the division-boards between them and the brood-nest. In cool weather, if the bees have deserted the sections, remove them quickly early in the morning, or late at evening; but if not remove them at midday on a warm day, brushing off the bees into the hive. Put on winter quilts at once.

Honeysuckle.—1. *Bees Alighting.*—It is difficult to know in all cases whether they are loaded with honey, but, generally speaking, a loaded bee has a heavy flight, and a tendency to drop short of the hive. 2. *Ivy Honey* —This is of value as winter stores, but is not of good flavour. Where much ivy exists, and the weather is favourable, the bees work hard upon it, and generally recommence brood-raising. 3. *Value of Foundation.*—There is sufficient wax in well-made foundation to form the cell-walls, and the consumption of honey is that required by the bees for the production of the necessary heat to soften the wax to draw out the cells and for their own sustenance. We can hardly estimate it so exactly as to state the value of naturally built comb and combs from foundation in the form of a ratio. 4. *Sugar.*—Sugar as used in apiculture was discussed at some length in No. 162, Vol. XIII., which we should recommend you to procure from our publisher. 5. *Wax.* Refined sugar being dry is therefore richer in actual sugar than moist, and would therefore enable bees to produce more wax weight for weight. 6. *Dry Sugar and Candy Feeding.*—If, as should be the case, moisture is provided inside the hive wherewith to render the sugar (or candy) eatable, there would be no more wear and tear than when syrup feeding. Of course if bees have to leave their hives for the necessary water the wear and tear and loss of life would be very heavy in spring.

R. C. T., *Surrey.*—1. *Doubling.*—The hives are small for doubling, but their worst features is the space between the top-bars of the frames and the crown-board. 2. *Quilts.*—There should be no space between frames and quilt. Fill up the space with quilts of woollen material, and place the crown-board over the quilts. A tea-box will scarcely keep out the rain. Get a good sound waterproof roof made for the hives. The best size for a doubling hive is a hive containing ten standard frames, but probably the two hives you possess may answer the purpose. 3. *Time for Doubling.*—When the hive is crowded with bees and honey begins to come in freely, you may place the second hive on the top of the other—probably by the middle or end of May. 4. *Increase.*—Yes, in a good season you will most likely obtain a natural swarm as well as surplus, if your bees are strong in numbers. 5. The sugars enclosed answer the description given to you, and are snitable for bee-feeding.

Mr. Bubness.—The specimen sent for identification is the Duke of Argyle's Tea Tree (*Lycium barbarum*), and, as you observe, flowers most of the summer. It is a quick growing shrub, and may be employed for covering unsightly walls, &c.

Inquirers.—*Glazing Sections.*—The glazed paper may be procured of any good stationer, any colour, exactly seventeen inches wide. The lace paper is used by all sorts of people—confectioners for bride and fancy cakes, undertakers for coffins,—the wider kinds, besides fancy box-makers, &c.

J. Cadenhead.—1. *Carniolans.*—The bees forwarded appear to be produced from a Carniolan queen mated with a black drone. This strain is considered to be very valuable as uniting the best qualities of both varieties. 2. *Sugar.*—No. 1 sample would be of service for dry sugar feeding. No. 2 was not the best for making syrup: use crystallised sugar for syrup making. The important thing in bee-feeding—either by dry sugar or syrup—is to get a sugar which is as far as possible free from any chemicals or their results, as well as from the dyes which are used to make sugar bright yellow or snow-white; and those we are in the habit of recommending possess the above qualities.

J. D. R.—*Suburban Bee-keeping.*—The nectar of flowers gathered and stored by the bees is the only true honey. Some change is undoubtedly effected by the bees in nectar. Sugar syrup fed to the bees and stored by them in the combs is no longer only sugar, but it cannot be called honey. Syrup may suffice for the being of bees, but for their well-being, and for the production of pure honey, they should be provided with proper bee-pasturage. 2. *Swarming.*—To prevent the absconding of swarms, you have a remedy in the case of first swarms by clipping the queen's wings so that she cannot fly, but the after-swarms are most apt to abscond, and the wings of their queens are not cut, because they have not taken their wedding flight. Frequently swarms cluster one after the other at a particular part of the garden, but this is not to be depended on. In suburban bee-keeping it is preferable to practise artificial swarming.

Spiders.—There is an extraordinary absence of spiders this year in East Surrey. Have any of your readers observed it elsewhere?—F. Lyon.

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Country Honey Supply, 23 Cornhill, E.C.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

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Editorial, Notices, &c.

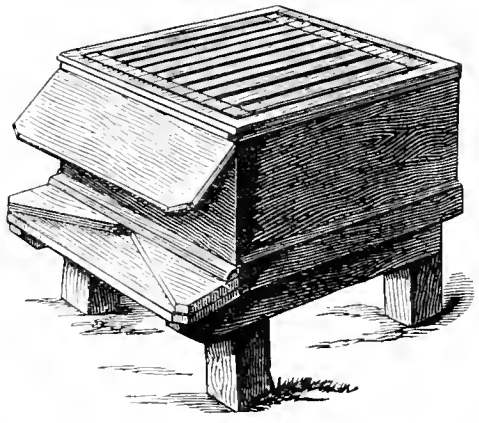
THE MEETING OF BRITISH AND COLONIAL BEE-KEEPERS AT SOUTH KENSINGTON.

As we go to press we learn that the proposed meeting of British and Colonial bee-keepers promises to be a most successful one. About one hundred guests will sit down to luncheon, including a goodly number of ladies. In addition to the representatives of the Ontario Bee-keepers' Association it is expected that Dr. May, the Chief Commissioner of Education for Ontario, will be present. Continental bee-keepers will be represented by J. Desconlayes, of the Swiss Association and Scotland will be represented by Mr. W. Raitt. A large number of the County Associations will be represented, the home counties, such as Middlesex, Herts, Surrey, &c., sending a goodly number. A full report of the proceedings will appear in our next issue.

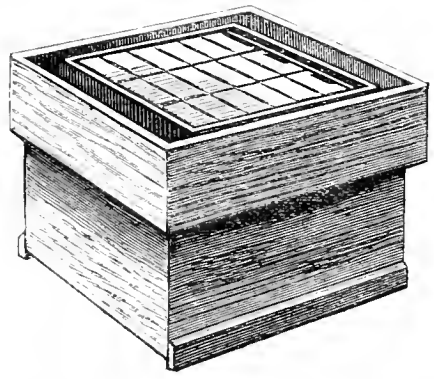
SOUTH KENSINGTON SHOW.

The first prize hive, price 20s., was exhibited by Joseph Dines and Son, hive-manfacturers, Maldon, Essex, at the tenth great Metropolitan Exhibition, held in the Conservatory of the Indian and Colonial Exhibition, in Class VIII., in which there were upwards of thirty entries.

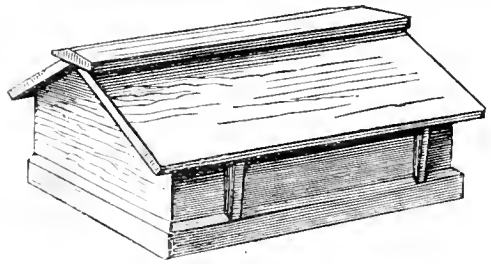
This hive consists of two bodies, a lift, stand,



and roof. Its parts are interchangeable. Each body contains ten standard frames and a division-board for use when worked on the doubling system for obtaining extracted honey. When worked for comb honey, cases of sections are placed in the lift, or in either of the bodies, which are sufficiently large to allow of being raised for inspection, or for removing filled sections. The hive may be arranged for winter use by withdrawing from the grooves in



the sides of the bodies the rests which support the lift, and allowing it to slide down over the body and to rest on the fillets. The roof can be brought down to the upper edge of the lift, and its fillets closing over the joint render the hive double-walled.



If the lift, or second body, is not required, the two rests being placed in the grooves of the sides of the lower body, and the roof resting upon them, ample space will be afforded for supering or feeding. During the winter, when neither supers nor feeders are required, the rests are removed, the roof is brought down over the lower body, and resting upon the fillets, again forms a complete double-walled hive. The shade, or porch, is moveable, and can be screwed to either of the bodies when the hive is contracted. A convenient place for the rests, when not in use, is within the brackets, under the roof boards, which are adapted for the purpose.

USEFUL HINTS.

September has been a glorious month of sunshine for our bees, and, while we write, the days, although perceptibly shorter, are balmy and genial. Bees are still working hard on the little mustard which retains its bloom. A few days ago we took off beautiful sections, white and transparent, filled from the bloom of the sea-lavender (*Statice limonium*), a species of thrift, which abounds in our locality, and a specimen of which we hope to show to our Canadian friends.

Feeding must now be completed as speedily as possible. The fine weather has been especially conducive to successful autumn feeding, and he must be a laggard indeed who has failed to take advantage of it.

We scarcely remember so favourable an autumn for apicultural work. When the change to rough and cold weather comes—as come it must shortly—the bees will refuse to store the food, or if carried down it will be left unsealed in the cells, a prolific source of future dysentery.

Extracting also should be speedily completed, the extracted combs being placed outside division-boards, with a space beneath, to admit the bees who will, in suitable weather, quickly clean the combs, which may then be stowed away for winter. Let each comb be wrapped in a separate sheet of paper, and stored in a dry room. Any combs bearing marks of the moth should be sprayed with carbolic solution previous to storing. When enlarging brood-nests, and feeding, at spring, the great advantage of possessing a stock of such combs will be fully realised. Drone-comb is hardly worth storing, except for a particular purpose, such as feeding early drones of any special race, for the early fecundation of queens, or for extracting, &c.

Winter Preparation should be completed immediately (see last 'Hints.') Before putting on the quilts the tops of the frames should be well scraped. If done carefully with a spatula—sold by most dealers—there is no necessity for raising the frames or disturbing the bees. Sugar-bags, which may be purchased of all grocers at a low price, form excellent material for laying on the frames—say two thicknesses—and over this should be placed the woollen or felt quilts, with enamelled cloth over all, and slight weight above to keep all in place. Floor-boards also should be well scraped and sponged with salicylic solution; for if left with the summer's refuse upon them, moisture, dampness, and mould, which would otherwise escape, are retained in the hive to the detriment of the bees. Attention to these little matters is of far greater importance than is generally supposed.

Hive-roofs must be waterproof, well painted, and well ventilated. In modern roofs the ventilation is often insufficient. Holes should be bored around, under the roof projection, and covered with perforated zinc, so that a circulation of air may be kept up over the hive-coverings or quilts. Above these latter chaff-cushions, or section-cases filled with chaff or cork-dust, may be advantageously used.

Houses.—The above remarks apply also to bee-houses, which as winter repositories have this advantage over single hives, viz., the accumulation of the heat, say, from a dozen hives. In such houses it is an easy matter, also, to surround all the hives with chaff. In such receptacles, in our experience, the bees winter well, albeit we receive a considerable amount of chaff of another kind from some of our apiarian friends for advocating the use of such exploded, ancient, and unwieldy affairs as 'houses.'

Propolised Quilts should not be used a second time. The saving of pence by such parsimony often results in pound-foolishness. Sugar-bag quilts cost about one half-penny each, and will last for years, since bees use no propolis during the winter months, and at spring they are discarded in favour of enamelled cloth.

Uniting small colonies with stronger ones may still be effected, if hitherto neglected, while the weather continues fine. There are two ways of doing this, either of which is generally successful. First, alternating the frames of the weak with those of the strong colony, taking the precaution to cage the queen, and injecting a little smoke. Secondly, by placing the weak colony in two divisions, one on each side of the stronger one, having first removed its queen, and again giving a little smoke. Both operations should be performed in the evening, and with so little disturbance of each colony that the bees are scarcely aroused, or realise that any change has been made. In the former the queen should be caged some hours before the union is made, and may be released after twelve hours' confinement.

Encasements.—A week ago, having a small colony covering about four standard frames, with a valued Italian queen, we decided to increase it by adding two colonies of condemned bees which had been united the previous evening, one queen having been removed and the other left. About one evening, to commence the operation we had placed the four frames of Italians at equal distances, occupying the whole interior of a ten-frame hive, had caged its queen under pipe-cover cage, and had wedged up the hive on a sheet, intending to remove the condemned queen from the blacks and to shake them down in front of their future home, hastening their entrance by carbolised feather, when we were imperatively summoned to give audience to a friend. On returning to the bees it was too dark to find the black queen, and not relishing the idea of delay and having all the work to perform a second time, we shook out bees and queen together and quickly drove them into the hive, and placed it on its accustomed stand. On inspection the following morning the pipe-cover cage—in the hurry having been insufficiently secured—lay on the floor-board, and we feared our Italian beauty had gone the way of all flesh, but a further examination revealed a couple of encasements—one on each outside comb—the one consisting of a closely woven knot of Italians, the other of an equally solid lump of blacks. In the centre of the Italians was the black queen. In the centre of the blacks was the Italian queen, both uninjured in the slightest degree, fresh and lively on being released, and evidently having been well fed during their incarceration. The Italian was recaged—more securely this time—the full complement of combs, with sufficient sealed honey, was given, and the colony with its queen released is now in winter quarters and carrying in pollen with hearty good-will.

'Clearing up.'—Our protégées being all safely ensconced in their winter domiciles, our hands are now free for setting our houses in order. The surface of the apiary, or the ground around the hives, should be cleared of all refuse, weeds, and long grass. Hives and stands must be well secured against winter storms, and rendered mouse and weather proof. Let all useless combs be collected and melted down, old skeps burned, section-cases scraped clean from propolis and wax, and stowed away for use another year—empty frames and unused floor-board and hives, ditto—all being previously sponged over with strong carbolic, or salicylic, solution, and well dried before storing. Extractors should be thoroughly cleaned and well dried, and surplus comb foundation stowed away in a warm cupboard or closet. The advantages of cleanliness and order in an apiary cannot be well over-rated.

Spiders' Webs destroy many bees. An occasional survey of the hives and houses, brush in hand, will discover numerous dead bees suspended. Let all crevices be cleared of webs and eggs. Spiders have been of late more numerous with us than usual, but few wasps are to be seen—a great contrast to last season, when the latter were in abundance and the former few. When in winter quarters please *leave the bees alone* to enjoy their well-earned repose.

THE CONFERENCE.

Sixth Paper.

HIVE CONSTRUCTION.

By C. N. Abbott, Esq.

The subject entrusted to me by the British Bee-keepers' Association might well have been placed in abler hands, but, having been honoured thus far, and informed that the time at my disposal is limited, I trust I may be excused if I make my introductory remarks as short as possible. I need not tell an audience of competent critics what a hive is, or for what purpose it is intended, nor need I enter upon a wearying repetition of the history of the hive and its improvements, and therefore, on the principle that 'sufficient for the day is the evil thereof,' I will with your permission, in the light of to-day take 'the hive' as it is, and, while gladly recognising what is good within it, will endeavour to point out and remedy such evils as may present themselves.

On the principles of hive-construction there is great diversity of opinion, and unfortunately there is no standard of excellence, nor has there ever been a steady seeking for hive improvement in any special direction or on any distinct line of principle. This assertion may raise a doubting smile, but a review of the past dozen years of competitive exhibitions and awards will show that the best hive for the time being has more often been accounted that which has had the most in it for the least money, rather than as being an improvement on the previous favourite. There has been no pretence at advancement on any well-defined lines, and year by year, and many times in each year, the order of merit in hives has varied with the judges, the locality, the selling price, and, too often, with 'the latest craze.'

By way of illustrating my meaning I will refer to the Stewarton storifying principle of hive construction, as one which has been long extant, the merits of which as compared with the frame-hive principle introduced by Mr. Woodbury were discussed with considerable animation in the early days of the *British Bee Journal*. Now although this Stewarton principle was championed by 'A Renfrewshire Bee-keeper,' which fact is very high commendation indeed, though it was ably striven for by Mr. C. W. Smith of Totteridge and Old Buckenham, who propounded the Carr-Stewarton Hive, and although it was most powerfully recommended by the Rev. E. Bartrum of Great Berkhamsted, who gave the weight of his name and experience to the Stewarton Hive as 'the hive of the busy man,' its principle of construction made no headway here; but now as the new 'Heddon Hive,' the latest thing in America, it crops out as the acmé of perfection; and the Stewarton, renamed the Heddon, is reputed the only hive that a busy man can afford to handle, if profit is to be the reward of his industry; and this is the latest craze.

In the meantime the prestige of every other principle of hive construction has been rising and falling with barometric irregularity; each has had its day, or its hour, of sunshine; the opinions of the judges, though most decided in individual cases being as varied as the weather generally, and the favour of the public as difficult to gauge as the weather would be if every one had a voice in the ordering of it.

I make these allusions in no spirit of fault-finding, but rather by way of discounting the criticism to which I shall be liable, and of shadowing forth the difficulty I feel in selecting a hive for dissection; though perhaps to be consistent, I ought to select the latest from America (the so-called 'Heddon hive'), from which country comes out most valuable advanced information on the other phenomenal puzzle to which I have alluded—the weather. But I feel that I ought to offer a word of caution in regard to the Heddon hive, and the craze for reversible hives and frames. Only a very short time ago that advanced bee-keeper, Mr. Heddon, convinced himself that the reversible frame idea was a grand thing, and it is publicly recorded that he went so far as to make 8000 of these frames for his own use, the whole of which, with the hives that contained them, he has now abandoned in favour of the '*New Hive' on the Stewarton storifying principle*, but with each horizontal section made capable of reversal; though it is highly doubtful if *they* will often be reversed,* or, more properly speaking, inverted.

Before further touching the principle of hive construction it will be well to state that bees will do well in any sufficient space where they are protected from the weather, be it a hollow tree, a courtyard, a rock, the roof, or the space between the partitions of a house or barn, or in the tower of a church or castle.

The chief purposes of bee existence, so far as they are understood, may be said to be the fructification of flowers and blossoms, and the continuance of their own species; and for these purposes they simply require, as domiciles, weather-proof spaces in which to build their brood-nest and store their surplus honey. But in hives in which they are to be cultivated it is essential that these spaces should be easily invadeable, or, in other words, the hive should be capable of ready manipulation by the bee-keeper.

Bees are cultivated that the honey which they instinctively accumulate in good seasons as provision against bad ones may be appropriated by their owner; and having due regard to the necessities in a hive for the bees' accommodation, he will establish the best principle in construction who produces the hive that will afford the easiest means of manipulation, and the best facilities for the removal of the honey that has been accumulated.

The instinct for storing is a wise provision against a bad harvest in an ensuing year, and this suggests that at the end of an indifferent season the bees may, under perfectly natural conditions, be on the brink of starvation, as they invariably are at the end of a good season when their owner for his own purposes removes their store of honey, and thus indicates the necessity, in constructing a hive, for providing a ready means of feeding bees on such emergency, and at any other time when experience shows that the administration of food will be advisable.

A hive, then, must be weatherproof and easy of manipulation, and it must afford spaces for breeding and storing, which, to be economical, should be expansive and contractible, and easily controllable, and there should be a ready means of feeding the bees; and these include nearly all the requirements of a hive for the ordinary purposes of bee-existence, subject, of course, to the weather and the seasons generally, and to the care and watchfulness of the bee-keeper when the seasons are unfavourable.

In hive-building, however, there are matters of far greater importance to bee-keepers than the requirements of the bees themselves, for the hive is really the machine by which the bee-keeper cultivates the bees for profit, and that must essentially be the best hive that affords the greatest facilities for their profitable cultivation, and such hive will necessarily contain the best principles in hive-construction.

Without wishing in any way to appear dictatorial, or to make the present an opportunity for unduly advancing my own ideas, or extolling my own production, I take it that, having been requested to offer my views on hives, it is my duty at all risks to put those views before you in the most unmistakeable way; and I have, therefore, brought with me a hive, the leading principle of which is now common to the bee-world, but which in itself contains a few ideas that I consider important elements to bee cultivation, and which I feel will be more readily understood if exhibited than they possibly could be by any poor explanation I might attempt to offer.

In relation to this hive, I hope to confine myself chiefly to the consideration of such points as more particularly affect the bee-keeper, for the hive is *his* machine, and excellence in his machinery is essential to easy working and

* In passing, it may be well to mention that the reversal of stock hives as a means of causing the bees to store honey more quickly in their supers, was described and discussed shortly under the heading, 'A new Method of Supering,' in Vol. III. of *B.B.J.*, 1875, pp. 184, 210, 211, and 231, and in Vol. IV., pp. 62 and 87. Pp. 184 lightly describes the method, on pp. 210 is a translation of a contribution of M. L. Pellence to the German Hanoverian *Central-blatt*, and on pp. 211 is the first suggestion of reversible frames by H. Jenner Fust, Esq., of Fallowfield, Gloucester, the last two of which articles are interesting and not unworthy of reproduction if only to show that the idea is not a new one.

management, more particularly when his business is extensive. The bees will work well in the crudest home, but their owner needs every possible convenience to enable him to do *his* work well and quickly.

In the first place, I think you will agree with me that portability of hives, though very essential, has been a much-neglected feature, and I need scarcely point to the advantage that will be gained in their transit and storage when hives can be packed, as in this instance, into one-third the space they occupy when made up and ready for use. I happen to have special knowledge of the craving there is for hives not made up, so that the receiver may put them together when they are wanted, or keep them in small compass biding that event; and I also know the difficulties that attend the nailing of the corresponding parts together correctly, and the vexation arising from the mismatching of the pieces. You will see, however, that it is possible, on the principle here shown, so to condense hives that, out of a comparatively small parcel, to make up a substantial hive in a few minutes, and have it in working order, and to condense it again in an equally short time. Further, for the purposes of cleaning and disinfecting, such a hive will offer especial advantages; and these features, I submit, are advantages beneficial to the bee-keeper, and improvements in hive-construction.

The porch, alighting-board, and entrance of hive, have caused the exercise of considerable ingenuity for the protection of bees, particularly in winter, but, as a rule, they are still too much exposed, and the efforts made to shut out the light, and prevent them being tempted forth into the snow, have not been satisfactory; and if by the arrangement here shown, by which the porch in winter is kept within the hive, and can be so disposed as to form an enclosed lobby, and better protection can be thus obtained, that also will be, I think, an advantage gained.

The necessity for feeding bees occasionally is universally admitted, but the arrangements for doing so are not all that can be desired, as, at present, the feeding apparatus is usually placed above the frames, necessitating the cutting of holes in the quilt to admit the bees to the feeding stage. This often causes an accumulation of nibblings, dirt, and dust on the floor-board under the feed-hole, which it would be well to dispense with, and anything that will do away with the necessity for cutting holes in the quilt will undoubtedly be an advantage. By the arrangement here shown, feeding takes place at the rear of the hive. There is no occasion to touch the quilt, or to raise the roof of the hive, and the food is given to the bees on the outside of and below the cluster, which, on the face of it, is more natural than the usual plan, and prevents the possibility of the bees being soaked with syrup when the bottle is unskilfully handled; it also leaves the cluster undisturbed, and the floor-board free from the accumulation mentioned.

In designing hives there should be every facility for access to the frames for the purpose of extracting the honey, and this is undoubtedly best provided in hives that can be opened from both the front and the rear, because the combs which have been emptied from the rear can at once be placed in the front, where they will be in the most desirable position for encouraging breeding and preventing swarming.

A hive should have facilities for receiving additional frames at both front and rear for the better prevention of swarming, and this it is evident is best provided for when it is not necessary to disturb the main body of the bees when adding such frames.

A hive should afford every facility for the addition and removal of surplus honey receptacles, for it is well known that in a state of nature bees store their surplus all round their brood nest, excepting only in a general way at the front and bottom of the same, and the hive that best affords these facilities will exhibit a nearer approach to perfection in hive construction.

A hive should afford especial facilities for the application of means for the conservation of heat during winter, by packing or otherwise, and equal facilities for the removal of the same, should it accidentally become wet, or otherwise undesirable, without disturbing the bees.

A hive which will permit of the readily putting together of two stocks within it, divided only by a thin partition, with ample winter packing on both sides of them, the same being easily removeable, and with facilities also for converting the front of each stock into an enclosed lobby, which can be filled with packing if desired, appears to offer the best means for the conservation of heat, and is consequently a nearer approach to perfection in the principle of hive construction.

I hope I have not, ladies and gentlemen, attempted in this paper to unduly extol my own productions, or call into question the merits of those of others; and I hope I have as carefully avoided comparison of the various adjuncts to a hive on which the public, and the judges too, are undecided. There is no question but that frames for the convenient handling of combs are highly desirable, but whether they shall hang upon metal runners, whether they shall be kept apart by metal ends or otherwise, or not kept apart at all, whether the frames or the sections in use are of the right size or shape, whether the right-angled form of hive is the best, whether in doubling hives it is better to put them one above the other, or to put the combs of one to the front or rear of the other. These and many other questions about which there are known differences of opinion, I have not touched upon, and though it is highly probable that some of the points upon which I have dwelt will not be generally acceptable, I apprehend such diversity is only natural when one offers opinions from his own standpoint, and I shall not complain. I respectfully thank you for your polite attention.

[We hope in a subsequent number to give illustrations of Mr. Abbott's Portable Hive.—Ed.]

Discussion.

Mr. Harris asked Mr. Abbott's opinion as to the advisability of placing waterproof coverings on the hive. He had always understood that it was a bad thing that the condensed moisture of animal bodies should be absorbed again by those animals.

Mr. Abbott said that anything which would hinder the evaporation of the moisture from the bees in winter was a bad thing. Excessive moisture in the hive was liable to cause dysentery, because in cold weather the bees could not venture abroad to obtain relief from the dampness. In spring it was necessary that the young bees should enjoy a moist atmosphere. In winter the bees could not fan out the moisture as in summer.

Mr. Lyon said Mr. Abbott's specimen hive was an ingenious production, but too complicated for a cottager, who needed something more elementary. He then narrated in detail an instance of ignorance and stupidity on the part of a cottager whom he had presented with a bar-frame hive, and started in proper working order, giving the man ample instructions in regard to management. With regard to waterproof coverings, if they were to turn over a straw skep, they would find it completely coated with propolis, so much so that it was often watertight; and the same might be said in regard to the quilt. He thought they must assume that the bees knew what was best for themselves; and their verdict was certainly in favour of an impervious covering.

Mr. Abbott said he had only exhibited the hive before them in order to illustrate his remarks on hive-construction, and had never contended that it was suitable for a cottager—especially a beginner.

Mr. Candey thought that the hive was simplicity itself to an intelligent cottager. He would like to know Mr. Abbott's opinion as to the desirability of feeding at the back of the hive, or on top of it.

Captain Campbell also thought that the hive was a marvel of simplicity, and it was additionally valuable because it could be taken to pieces, and enclosed in a small space. This was of great advantage because it could be carried about the country and exhibited.

Mr. Abbott said the system of feeding behind was much in advance of feeding on the top.

Mr. Kingsby thought it would be expecting too much of any cottager, unless he were a carpenter, to convert a common box into a bar-frame hive, as suggested by Mr. Candey.

The Chairman thanked Mr. Abbott for his able and interesting paper, and also for giving them ocular demon-

stration of his principles in the cleverly-contrived model before them. He had merely brought the hive with him for the purpose of illustrating his remarks on hive-construction, and not for the purpose of advocating it as the best contrivance ever exhibited. They were not all agreed on the subject of hive-construction; in fact, there was a great diversity of views thereon amongst bee-keepers. With regard to feeding in the rear of the hive, that system was generally adopted in Switzerland. Feeding should not be left till the coldest weather, but be done in the autumn. He liked Mr. Abbott's hive because it was the nearest approach to the hive he used and advocated. He concluded by moving a vote of thanks to the authors of the papers which had been read that day.

Captain Campbell seconded the motion, which was carried unanimously.

A gentleman in the audience then proposed a vote of thanks to the Chairman, which was carried by acclamation.

Mr. Cowan, in responding to the vote of thanks, stated that it had given him much pleasure to preside and listen to the instructive papers and interesting discussions. He very much regretted, as he was sure they all did, that our Canadian friends had not turned up in time for this exhibition, so that results might have been compared. He thought that whatever might have been said a few years ago, it could not but convince every one, after the grand display of honey they had witnessed, that British Bee-keepers can not only supply the demand for honey, but that also they are not to be beaten by any one in putting honey up in a neat and attractive form. He was sorry to find there was a very little Colonial honey shown, and understood that one of the principal exhibitors was attracted by the hope of getting the fancy prices of former days. He said it would not pay them to send honey over for the price bee-keepers were selling their honey here. He (Mr. Cowan) advised bee-keepers to be contented with a fair profit, and he would then not fear legitimate foreign competition. He thanked them for the interest they had all shown in the proceedings, and hoped that they had been mutually benefited by what they had seen and heard.

The proceedings then closed.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

ANOTHER TRIUMPH, BUT MORE RED TAPE.

[619.] During the season of 1886, I have been sending queens by letter-post to various parts of Great Britain, and with excellent results. Some have even been sent in this manner to America *viâ* London. At first all these packages were registered. But as one or two packages sent to England last year without registration were delivered all right, and also several sent from here this season, that happened to get in too late for registration, I conceived the idea of trying to get British post-officials accustomed to the delivery of such packages when *not* registered. With this end in view, more of them were sent without being registered, letter-rates of postage having, however, been prepaid in all instances. I reasoned that, as these little packages have now been passing through the London office for several years from Cyprus, Syria, Palestine, and Germany, the greater number of the officials must have become familiar with them, and must have learned that, packed in the manner they are, there is absolutely no danger to post-officials, nor damage to other mail-matter through the transmission of these 'live animals.' I have made no secret as to the contents of these packages; in fact, have generally written on the cover, very plainly, the word, 'BEES.'

Emboldened by favourable reports, at last I ceased to register packages of bees for England—even sent them off by the dozen, only paying ordinary foreign letter-rates of postage, 2½*d.* per half ounce. And now it would be easy to imagine that this was just what y^e^ London poste-officiale was looking for—in fact, he had cut a long piece of red tape, and labelled it, 'BEES,' and hung it where he could put his hand on it in a moment; meanwhile he was just lying in wait. Early in September his opportunity came, for on the 16th of August I posted a lot of queens, among them five packages for England. I wonder if some bee-keeper who hasn't got far enough along to know that Cyprians can be handled, at most times, with neither veil nor smoker, gloves, nor carbolic-acid pot, has not been telling this official horrible tales, imputing barbarian ferocity to these little six-footed islanders! At any rate, the red tape came down forthwith, the five boxes were tied up, and their Cyprian majesties were started back to their native land. They were put into a neat wooden box, 6 × 4 × 4 in., made of ½-in. stuff, and having about two dozen holes punched in its sides. The whole was closely wrapped with paper, and sealed with the official seal, and to-day (September 17th) I got it back, with its big red lions and *Honi soit qui mal y pense!* Well this last expresses about what I thought, for it would ill become me now, I think, after having overcome greater obstacles than this, to make a wry face over the notice which accompanied these bees, informing the postmaster in Cyprus 'that such packages are not mailable.' And, of course, the latter will decline receiving additional consignments. I had hoped in future to put the prices for imported Cyprians lower, the success in mailing them direct from here to customers in Europe and America warranting me in doing so. However the matter will not rest where it is. I have already an idea or two as to how this hard knot, in red tape, is to be loosened. Meanwhile, I'll pack my *valise* and go and see the good wife and two little folks; and if the former isn't able to suggest something to go along with my 'idea or two,' then I will have missed my count.

'But the triumph? where does that come in, if you haven't overcome this red tape yet?' Well, that is of another sort. By counting up you will see that these bees were returned to me on the *thirty-third* day after they were removed from their hives. Though I packed them carefully, expecting them to arrive in England in prime order, I did not suppose they would be more than fifteen days on the way, possibly sixteen, but more likely thirteen or fourteen, by the route they were sent. Thus I did not expect, as I somewhat mechanically removed the outer case when the package was handed me, to find a live bee among them all. I shook one or two of the boxes, and blew in at the holes, and remarked, 'Of course they're all as dead as door-nails.' The boxes smelled of carbolic acid too. Pray, has some quarantine officer been reading the recent numbers of the *British Bee Journal*, was my thought, and learned that Cyprians can be tamed by carbolic acid? Well, he's tamed these, anyway! But an hour later, at the apiary, I was astonished upon opening a box addressed to Mr. F. Cheshire to find the bees in fine order, but two workers dead, rest bright and lively; queen as fresh as though just taken from the hive; cage without a speck, and with no bad smell; food about two-thirds consumed.

When they saw the light they rubbed their eyes as though they had been trying friend Clarke's hibernation theory for thirty-and-three days, and, as though delighted to find they were still in their native land, some of them sailed about the room gaily. You may be sure I pulled off my coat. The sun was setting, and in these lands twilight lasts but a few minutes. All must be gotten in the hives at once. The second box (addressed to Mr. W. D. Slade, Cheltenham) was not in as good condition, there being several dead workers in it, and two or three spots on the inside, but queen and part of workers were active. The food was nearly all consumed, yet the little left was soft and still moist. The next box opened had been mailed to Mr. Samuel Simmins, Rottingdean, and was in similar condition to that just described, except that there were fewer dead workers, and but one-half of food was consumed. The other two should have been delivered to Mr. Neighbour when they were in London, which place they had undoubtedly reached alive, for though both boxes contained only dead bees when I opened them to-day, it is evident they died of starvation. There is no sign of disease, and the poor fellows only succumbed after they had gnawed away the bit of wax covering the food compartment, and found no escape from their fate. In each of these two boxes the food compartment was oval instead of round, and held scarce two-thirds as much as the round holes of the other cages, though quite enough for a journey of eighteen days, anyway.

To be sure I mailed a queen to Australia last fall that was *forty* days in the mails, and arrived in perfect order, and these were only *thirty-three* days out of their hives. Still, I count it a triumph, because there were *five* of these, and the two that died only succumbed for want of food; besides they were not put up with the expectation that they would have such a long journey to undergo. And, finally, I think I have derived from an examination of these returned boxes a valuable point in regard to packing. 'Tis an ill wind that blows nobody some good.'

Some thirty more queens are on the way, and yet to be heard from. I am half persuaded that if ye London poste-official will cut up a good stock of red tape, I shall, like the character Mark Tapley in Dickens's *Martin Chuzzlewit*, find myself in such circumstances as will enable me 'to come out strong.' And if I keep 'jolly,' as he did, 'there'll be some credit in it.'—Yours, with a bee-keeper's greeting, FRANK BENTON, *Larnaca, Cyprus, Sept.* 17.

RAYNOR *v.* HUBER.

[620.] Mr. Bonner-Chambers takes me severely to task for daring to oppose a statement of Huber with regard to the reception of a queen by a colony of bees queenless, and without the power of raising one. Does he mean to assert that to Huber the old maxim *Humanum est errare* does not and cannot apply? No man has a greater respect for the memory of that great pioneer in apicultural science than myself, but I cannot shut my eyes to his errors and mistakes. Wonderful, indeed, were his discoveries, when we remember that he saw not with his own eyes, and consider how slight was the knowledge of his favourite science possessed by the world in those early days. It is certainly refreshing in this sceptical age to find a mortal raised to the divine pedestal.

The task of pointing out the errors of one whom we all revere is not an agreeable one; I will not, therefore, occupy your space with reference to these, but will call your attention to one only. Huber stated that in the whole course of his experience he never knew more than one instance of a queen being stung by a worker, and that was unintentional Now, all who have any experience on the subject know the absurdity of such a statement. I have repeatedly seen queens stung to death by workers on being released from an encasement. Not long ago I was carrying through the apiary in my fingers a queen, when a worker suddenly lit upon her thorax and plunged in its sting between the roots of her wings, and the poor queen expired instantly. Let any one present an alien queen at the entrance of one of his hives, in its normal condition, and he will soon have ocular demonstration of the truth of my assertion. But as regards queenless bees joyfully receiving a queen, I will trouble you with one instance out of many.

On noticing Mr. Bonner-Chambers' letter in your last issue, it occurred to me that I had a colony which had been queenless for several weeks, and I determined at once to make one more experiment. This colony I had lately purchased from a cottager who was about to remove to a distance, and did not wish to take his bees. It was in a modern frame hive, containing nine standard frames and about 25 lbs. of sealed honey. All the combs were crowded with bees, but the colony possessed neither queen, eggs, nor larvæ, and had evidently been queenless for some time, there being a large number of drones present. About 3 p.m. I removed a laying queen from another colony—in which I was about to insert an Italian queen—and immediately presented her at the entrance of the queenless hive, allowing her quietly to run in without any disturbance of the colony whatever. Two hours afterwards I found the poor queen lying dead under the alighting-board. The colony has now a fertile queen introduced by cage. I cannot say that I was surprised at the result, as the same thing had occurred before in repeated experiments. Perhaps, as Mr. Bonner-Chambers suggests, this 'stock of bees had become abnormal in the twinkling of an eye, and refused the alien queen because she was not after their own mind.' These abnormal freaks of the bees, however, are rather expensive when the queens they refuse are costly imported ones.

It could not be that the bees were bent upon raising a queen 'after their own sweet will,' for, in this case, there were no eggs or larvæ, and no attempts at building queen-cells. The loss may have been owing to my own clumsiness or stupidity, but the belief in the truth of the old maxim *Nemo solus satis sapit* consoles me under this misfortune, and enables me stoically to bear the censure of Mr. Bonner-Chambers.—GEORGE RAYNOR.

'POINTS' IN JUDGING COMB HONEY.

[621.] I am glad to see the query of 'Tref Eglwys' has elicited a reply from a judge. The oracle has vouchsafed a reply at last, but mark the wording of the first period; nothing definite has been arrived at up to the present; 'alas, poor exhibitors!'—note this admission, after twelve years' experience, and yet a judge tells us judges are still floundering about (trying, I hope,) to find the points of judging section honey. Then he kindly adds a few salient features which, with your kind indulgence, I will enlarge on *seriatim*, hoping thereby to get a fuller reply in future numbers of the *British Bee Journal*, not only from our obliging friend, 'W. B. W.,' but others also who have in the past filled, and look forward in the future to fill, the honourable if onerous duty of judge. First point, 'Well filled,' presumably a section containing sixteen ounces to the pound. Second point, 'few pop-holes,' that is, evidently, a section with only the four bee-ways at the corners, all the other parts, including the outside row of cells, filled up and sealed, thus forming a margin of raised cells around the inside of the section, and not requiring half an inch of paper to hide the defects. Third point, 'regularity of cells,' intended, without doubt, to refer to a section either all worker size or all drone size, *i.e.*, uniformity in cells. Fourth point, 'smooth surface;' now, is that intended to convey the idea that a first prize section should be sealed flat, smooth, and dense, like a marble slab, or that it should show regularity of cells both vertically and

horizontally, with evenness of capping, not necessarily an even flat surface, but a corrugated surface by each cell or row of cells standing out, yet sealed perfectly? Fifth point, 'colour,' last but not least mentioned by Mr. Webster; on this point judges are evidently in a quandary, some judges preferring one colour, some another colour; our kind friend prefers a rich amber colour, viewed semi-transparently (like unto the tip or mouthpiece of the burner of 'ye fragrant weed.') May I venture to add another point, making six?—'Flavour.' A whole host of articles may be, and no doubt are, best judged by outward appearances, but honey, sir, surely honey is like the old lady's pudding, the proof of the quality is in the eating.—W. Woodley.

SOUTH KENSINGTON SHOW.

[622.] The Hon. Sec. of the Wilts Bee-keepers' Association having touched the Lancashire and Cheshire Bee-keepers' Association in a vulnerable point, Mr. Buckler comes to the rescue. I feel sure that what Mr. Burkitt wished to convey to the bee-keeping public was that the bulk of the honey staged by the L. and C. came from one district; he did not say or insinuate that the prescribed number of exhibitors in the Association was not represented on the exhibit, but that the exhibit was not representative of all parts of a county, or, as in this case, of two combined counties. A reference to the map of England will show that a distance of 100 miles intervenes between Audlem in the south of Cheshire, and Hawkshead in the north of Lancashire, as the bee flies; and if my memory serves me faithfully, I believe Mr. Carr told me himself, at South Kensington, that a large part of the exhibit was from his own apiary.

I am not saying one word against the exhibit. We all knew and admitted it was *the best* (far and away the best) in the show, corks or no corks; only in parentheses allow me to remark that what is sauce for the goose is, or ought to be, sauce for the gander; and if wealthy associations were not disqualified by the omission of corks, the poor, isolated, single-handed exhibitor ought on the same occasion to have been allowed to pass muster. Anyone who saw the exhibit would not require Mr. Buckler's P.S. *re* mixing prime and *inferior* honey together. As an old bee-keeper, if not an experienced one, I know that by mixing together samples of prime honey a large quantity of honey can be obtained of one uniform colour and quality,—Mr. Burkitt's idea. But, I ask, where is the bee-keeper outside Colney Hatch that would mix an inferior sample of honey with a prime one and expect to produce a sample of prime excellence?

If the Exhibit No. 7, Class I, was thoroughly honest and faithfully representative of the various districts of Lancashire and Cheshire, and that honey of such general excellence is produced by one and all the bee-keepers in the two counties, the Association will be able to bid defiance to any other county in England in any future contest; planting their standard on a higher level than any other, they will be able to cry 'Excelsior.'—W. Woodley.

MY EXPERIENCE.

[623.] Being naturally fond of animal life, and interesting myself in insects and animals generally, I should long since have become an apiarist had I not been told, 'Bees are uninteresting, dangerous insects, with whom nothing can be done excepting twice a-year—once when they swarm, and once when you smother them to get their honey. At all other times they are, so far as amusement goes, a dead failure, and so far as comfort goes, a decided nuisance.' Being told this I turned my attention elsewhere, till having attended several bee lectures I fancied that what I had previously been told could not be correct, and determined to try for myself. Mr. Editor, may I relate my experience?

Last month, being in Cheshire, I bought a hive, had it packed by an expert, or by one who called himself such, and started by express train for home. On the way the bees worked out, but at Birmingham a friendly porter made the remainder safe, and they arrived home in the hive without further mishap. Immediately I released them and placed my hive; but what a sight for a novice, masses of drowned and glutinised bees, combs broken from frames, and a hive saturated with honey! Knowing no one to help me, I cleaned the hive as well as I could, straightened and refastened the combs, dried and replaced as many of the bees as possible, but in a few days had one hive and a few dirty combs, but no bees. Nothing to do but try again, so I bought two condemned stocks, and having attended one or two more lectures on 'bee-driving' by experts, tried my maiden hand with the deplorable result of leaving my condemned stocks where they were, and returning home the possessor of thirty stings. Now stings from bees almost make me faint, not only at the time of receipt, but also a few hours afterwards, and sometimes also that day week, but not oftener. So I left my purchase alone for eight days. Then I called in the help of a member of a bee society; and he, with the help of an assistant, I standing at his elbow, drove both my purchases and transferred them into my own bar-frame hives without receiving a single sting. Singularly enough since with me—these bees formerly so pugnacious—allow me with the aid of smoke to do what I please with them. Why is this?

[Perhaps the bees had changed their queen, and with her their nature; or you may have chosen a more propitious hour of the day for manipulation; or you do not now unnecessarily irritate them.]

Being so successful in manipulating these (after purchase), and having read and studied, by books, the art of driving bees, I purchased another condemned stock, and with an assistant attempted to drive them from their skep into mine, with the sad result only of irritating the bees, who first of all stung me severely, and then bunged up their late owner's eyes, retaining possession of their hive. These stings pained me as much as the former ones, and like the last made my hands useless for two or three days, but after waiting a week I determined to try again and again; having attended another lecture, and conversed on the subject with another expert, made my third attempt, but with no better result. Again I returned home stung severely, again a few hours afterwards I was rendered almost insensible, and for the next two or three days suffered from swollen hands, from which the doctor said both sun and air were to be excluded. And all this though I had worn a veil, dog-skin gloves, and woollen mittens, through all of which their stings had penetrated.

Now, sir, let me explain my *modus operandi*, and kindly tell me wherein I erred, and how next I may escape being stung; for I not only paid for the last bees as a condemned stock, but after my last defeat purchased them their hive and their honey, and am determined to transport them home somehow. Having as far as I possibly could hermetically sealed myself in my clothing (veil and gloves) from any unforeseen attack, and having put all things in readiness on a handy table, I approached the hive to be manipulated, smoker in hand. Having smoked them as I thought sufficiently, and certainly for a longer time than the experts I had watched had done, and having loosened the hive from its stand I retired for a minute or so. Returning I again smoked them well, and then reversed the position of the hive on its stand, and throwing a cheese-cloth over its upturned opening carried it to the table and placed it thereon inverted in a bucket. The bees continuing unruly I, first of all, resmoked, and then treating to syrup proceeded to affix the skep into which I desired to drive them, but on removing the cheese-cloth every bee ap-

peared on the upturned bottom of the hive; and though I smoked, syrupped, and tapped hard, refused to go anywhere but to sting me and my accomplice and forced us to beat a retreat. I have now received seventy-two stings in August, 1886, and find the last sting as painful and as effective as the first, and would like to know how soon may I expect to become inoculated? In what did I err?

[The placing of the cheese-cloth over the bees would have prevented them from running up to upper skep. The time that elapsed between the smokings enabled them to throw off the effect, and the treatment that they had received rendered them more than usually pugnacious, and induced them to try a contest with you. After the first smoking you should have acted with more promptitude. We are afraid we cannot yet pronounce you to be sufficiently inoculated; the time the process may take, and the number of stings to be received, vary with the constitution of the person.]

My first attempt was in the evening, which I was told was the cause of my being stung (or partially so), but my last two attempts were on fine days, from 4.30 to 6 p.m., and the materials I used in my smoker were fustian, brown paper, and hempen sacks. There is an old saying, 'Bunglers and fools complain of their tools,' so I do not like to complain of my smoker, though I found the one I used on the last occasion (a cold-blast one purchased at the Reading Show) ejected smoke more effectually from its stern than from its nozzle, choking the operator more than subduing the bees.

I regret, Mr. Editor, troubling you with so long a letter, but should be thankful if you or any of your numerous readers could tell me how to secure a swarm of condemned bees without receiving twenty-four stings each time. — A Suffering though Undaunted Novice.

PROMOTION OF BEE-KEEPING AMONG THE YOUNG.

[624.] I am *much comforted* to find that Dr. Bartrum does not wish to deprive the elementary teacher of his sabbath. Into the general question of industrial training I do not wish to follow him; the subject has been discussed again and again in the papers devoted to education, and Dr. B. advances nothing new in connexion therewith. Of this, however, he may be fully assured that if anything of the kind is attempted in rural districts, the teacher will come in for a large share of the work. I will only remark that Dr. B. is too late with his prescription for the relief of the 'dreadful depression to which I alluded *so feelingly*,' and which he, happily free from Government codes and Government inspection, passes over so lightly. If he will refer to my previous communication (559) he will find I strongly recommend bee-keeping to my fellow country teachers for this very reason.

Allow me to thank the Rev. F. G. Jenyns for his kind promise of a cheap edition of his *Book about Bees*.

P.S.—In sending you my second communication, allow me to thank you for your article on the 'Extension of Bee-keeping' in your issue of September 9th. It discloses an intimate and exact appreciation of the actual position of the elementary teacher, such as seldom appears in the public press; and, while I hope we shall still exercise 'becoming humility,' I (and every teacher who reads your article) cannot help being pleased with its generous justice, and grateful for your sympathy. —B. B.

PRICE OF HONEY.

[625.] First let me thank you for the courtesy you have shown in sending on letters addressed to me through the *B. B. J.* Perhaps your readers would like to know the result.

No. 1, 200 lbs. at 8*d.*; upon this lot carriage is paid by seller, but empties have to be returned, and carriage back paid by buyer. No. 2 quotes *about* 7*d.*, and asks if I provide vessels and pay carriage. No. 3 asks 6*d.*, in tins of 30 lbs. each—tins to be returned or charged 1*s.* 6*d.* each—carriage to be paid by buyer. No. 4 asks 8*d.*, 'carriage paid to nearest station in direct communication with our lines of rail' (Ireland). No. 5 quotes 7*d.*, and does not mention carriage. I have also several applications from bee-keepers in my own district and elsewhere, who probably recognised the initials to my former letter, quoting 1-lb. bottles at 9*s.* a dozen; another, 8*d.* per lb., carriage paid, &c. From another source I received an offer of 1-lb. sections—the only offer of comb honey. To this gentleman I wrote, asking a quotation for the sections, delivered free to my door, including carriage of empties if to be returned. I have not as yet received a reply.

From the foregoing, it will be seen that the most favourable offer which has been received is 6*d.* per lb., and this being a long way off, the carriage will, with expense of returning empties or buying tins, run it up to 7*d.* nearly.

I take this opportunity to thank those who have made offers, two of which will probably have to be accepted, as I must buy this week. But surely, sir, there is no necessity for 'Wilts' and his friends to look about for friends to *give* their honey to, when so prominent an advertisement as your columns afforded me have shown no lower offers than what are herein stated.

I send with this stamps for advertisement for comb honey, and to further test the possibility of unearthing some of those who 'can't sell at any price.' I am still open to buy run honey at 'grumbling prices.'—Joseph H. Bolton.

MORE LIGHT.

[626.] My very sincere thanks are due to the correspondents who have been good enough to spend time in answering my letter appearing in the *Journal* of the 19th August. 'F. L.' hits the nail when he says 'that an adept is not the best teacher of beginners.' One cannot help coming to the conclusion that the fathers of bee-keeping have become so saturated with experience that they have forgotten the days of their novitiate, and, arrived at the goal of perfect success, have overlooked the thorny road leading thither. To 'F. L.' for his very kindly and sympathetic letter I tender many thanks.

I am also much obliged to Mr. Grimshaw for his reply. His paraphrase of the old adage about the multitude of counsellors is, I begin to think, very true, and also his advice about focussing one's reading. My doubts have arisen perhaps from this want of focus, and through too much reading. I have devoured 'Cowan,' 'Rusbridge,' 'Cheshire,' 'Modern Bee-keeping,' 'Taylor,' 'Hunter,' Pettigrew,' and 'Ribeaucourt,' besides the host of small pamphlets published under the auspices of the B. B. K. A. After all this I have arrived at that state so tersely described by John Ruskin, 'As soon as people try honestly to see anything, a noble dimness begins. They see more than others, but the consequence of this seeing more is, that they feel they cannot see at all.' The 'noble dimness' is mine. For the future I shall content myself with practical experience, tempered with some of the hints, especially if you, Sir, will favour us, at Mr. Grimshaw's suggestion, with your opinion in a foot-note, on such of them as appear in the *Journal*. I ask Mr. Grimshaw to accept my gratitude for the guidance his letter has given me.

Your correspondent, 'Boz,' has done his best to give assistance, but the sting in the last part of his letter detracts from its pleasure. I asked no one (least of all 'Boz') to make experiments for me, nor do I wish him to spend time on my account which, apparently, he can

spend more profitably on his own. But, bating this last unkindness, I must confess that the expression of opinion I have obtained from your correspondents has been very welcome to me. So far in bee-keeping, I have never appealed to any one for advice in vain.—SEDENS IN ANTRO.

'A BEE IN HIS EAR.'

[627.] Your correspondent's letter (614), page 453, in the *Bee Journal* of September 30th, reminds me of a similar incident which happened to me a year or two ago. While walking in the garden near the hives a bee flew into my ear, into which it penetrated so far that my companion refused to believe in the invader, who evidently did not feel at home and who, by its 'buzzing' and the use of its sting, convinced me I was not mistaken. I went into the house, and whilst my companion held my ear open a third person extracted the busy bee by the aid of a long pin. This was mid-day on Saturday, and, strange to say, I felt no ill effects until the following Monday morning, when I awoke with violent ear-ache, which continued about two hours. This was all the inconvenience I suffered.—Z. C., *Staffs.*

A NOVICE'S EXPERIENCE.

[628.] I drove some condemned bees for the first time since I have been a bee-keeper. I began last year the early part of this month, and considering that I have never seen bees driven or done it myself I managed well, as I had to drive from old tea-boxes into skeps, holding the skep with one hand and drumming with the other. I had to go some twenty-five miles by train, and my expenses were about 15*s*. Well, I got them home about ten o'clock, too late to unite and put into bar-frame hives, so I left them until next evening, when I and my brother took one of the hives out on the lawn to find queen, our *modus operandi* being to empty bees on to a sheet with an extra hive for them to run up into. They would not move except to fly up and settle on us, and no sign could we see of the queen, so in despair we left them on the lawn and went away to clear ourselves of bees, which we could not do near the skep as we seemed to be an attraction to the bees, who as fast as we brushed them off others came in their place, and as it was getting dark we could do no more that evening. Next evening the other lot, which was an exceedingly large and heavy one, I found to my disgust that only about a pint was alive. I therefore took the remainder and put them into a skep with the first lot, and having scented them well, and also the bar-frame lot to which I was going to unite them, poured them all on to the top of the frames and made them run down, queens and all, by a handkerchief wetted with diluted carbolic, into the hive. There were only about two quarts, or less, altogether. There was not much fighting, but a good many dead were carried out next morning. They are now flourishing, and these last two weeks have collected a lot of honey, and I have given them about 6 lbs. of syrup. I manipulated on Sunday last for the first time without gloves, and got on swimmingly with my own bees, and also with two united lots of condemned bees, driven by my brother and self later on and united satisfactorily. I caught one of the queens in driving, and also manipulated some hybrids, which, from some reason or other, although they were a large swarm, were exceedingly sluggish and peculiar, and which are a particularly savage lot. I had finished inspecting when one gave me, when standing some feet from the hive, an exceedingly savage sting on the wrist, which swelled greatly, and for two days was in a dreadfully inflamed and painful state, and made me feel really ill and feverish, which I cannot understand as I have been stung many times this year with no ill effects except a slight swelling and irritation. I visited them the other day, but not to inspect, and saw a very peculiar sight. The bees were dragging a hybrid queen across the alighting-board into the hive, and she struggling out again to the entrance, but unable to fly away. I watched for some minutes, but was unable to stay long, and when I left she was still at the entrance.

My bees have done pretty well this year considering that I made many mistakes with them in the early spring, and was away from them for more than a month in April and May, and dysentery was exceedingly bad with them in the spring. Is heath the same as heather, as there is plenty of the former about here? Would it be well to put the hives (I have two) in two very large boxes, packing them well in with straw or hay and leaving an opening opposite the front of the hive?

Is there any reason for one sting being so much more severe than others? I find it most difficult to find the queen, in fact have never seen the queens in either of my hives, but know they are this year's, as I lost two first swarms while I was away in the spring. Is there any way of telling an old from a young queen, and which is really the easiest way to find her? I lost my first two hives of bees in a similar way to the lady in your September 23rd publication, and practically only started this spring.—GRAHAM FORESTER, *Swansea, Sept.* 25.

[Some stings are undoubtedly more painful than others; while some scarcely abrade the skin, others are thrust deeply into the flesh, piercing sometimes a vein, which probably was your case. 2. Heath and heather are generally convertible terms. 3. Your mode of winter packing will answer the purpose. 4. Young queens are known by their greater litheness and activity of movement. The best mode of finding is to accustom oneself to the difference of appearance between the bees and the queen.]

A JOURNEY FOR DRIVEN BEES.

[629.] Being on a driving tour the other day I met with a lady bee-keeper in Shropshire who invited me to drive some bees for her near Wellington. Accordingly we arranged that I should go by first train on Wednesday, September 22nd, so on the appointed morning, having all I might require packed up, I started for the nearest station, a distance of two and a half miles, and got comfortably seated in the carriage by 7.48 a.m. and arrived at the other end of my railway journey about 8.34 a.m., and on inquiring of a young man which was my way to the house of my friend, he told me to get into the trap and he would take me there, as he had been waiting for me some time, so I got up and away we went some little over three miles, when we alighted at my destination.

On going into the garden I found thirteen stocks of bees, most of the hives in a wretched state, but with plenty of bees and honey. My lady friend pointed out nine stocks to drive, the bees from which she kindly gave me. I commenced operations at ten o'clock with a straw skep with dome top, but with hole in, and another straw skep fitted over it and both well fastened together with the comb. This took me forty minutes before I had both hives cleared of bees, which rather daunted me, as I saw some in worse form than No. 1. No. 2 was flat-topped skep on an old rotten branch which, with about three inches all round the hive, was well covered with fungus; the bees from this were glad to leave, and came out in ten minutes. Nos. 3 and 4 were fairly good skeps on covered stands some four feet high. Both these came out in good time, when I left the garden some little time for luncheon. No. 5 was a 'Neighbour's' bar-frame hive, single walls, with all the frames completely glued together, so I considered it best to drive the bees from it instead of attempting to take the frames out. The bees did not run so quickly as from a skep in consequence of the frames being so firmly glued

together, which prevented me from jarring the combs as I ought. Now comes No. 6, which was the strongest stock and in the most curious form. The bottom portion was a box about twenty inches square and eight inches deep upside down, the bottom of which was composed of three boards; the middle board having a hole cut in the middle had fallen into the bees, then over this was placed a skep which was prevented from sinking into box by two sticks placed across the box from side to side, and which raised the skep so that the bees could get in and out all round, and over all was placed a large bag, which, when I tried to remove, I found securely fastened to skep and box by a splendid lot of comb; this being the first time I have found a stock of bees in a bag. I took a good sized dishful of comb from the bag, driving the bees away with smoker and wing, then I drove the skep and box. Nos. 7 and 8 were small skeps, which I soon disposed of, and No. 9—which was the last—was in one of Thorley's food boxes, which produced a capital lot of bees and run in good time, and brought my day's driving to a close about four o'clock. When tea was over I was driven to the station, and arrived home about eight o'clock with the nine stocks in three skeps.—ELIHU CLOWES.

Echoes from the Hives.

Appleby, Doncaster, October 2nd.—I have done fairly well this season, and my honey has been of the paler colour from white clover, as good as that shown at South Kensington. I have also taken some hives to the heather, but fear with no result. In driving condemned bees this year I find fewer in the hives than usual. I hope some of your readers will give their results with the Cowan hive, and how many tiers they have raised the body boxes. I have done far better undoubtedly with them than any other make. I shall have more next year.—B. C. W.

North Leicestershire, Oct. 2nd.—The cold spell which occurred in the fourth week of last month sent the bees into close quarters, and made boxing up for the winter a safe and easy matter. The return of warm weather has, however, wakened them up again, and they are as fierce as ever and exceedingly prone to rob. The final result of the honey is poor compared with last year's, but there is a much larger yield than bee-keepers anticipated on the longest day. Not a wasp to be seen. Ivy is not out yet, but there is a large show of buds, and if this warm weather (over 60° Fahr.) continue, a good store of pollen for early use will be secured.—E. B.

Summerhill, Aberdeen, Sept. 28th.—I have noticed from reports in the *Journal* that wasps are very scarce in most places. In this district, however, they are as troublesome as usual.—J. CADENHEAD.

Alfriston, Sussex, Oct. 4th.—The season in this part of the country has been pretty fair; but large quantities of honey were out of the question, as the number of swarms was more than usual. The best hive of mine gave about 35 lbs. I have two bar-hives, and there is only one more in this parish that I know of, but I should say there are nearly 100 straw skeps and box hives kept. The apple blossom was a failure but for a week or two, during which time all full sections were taken; the honey flow was larger than I expected. Heping we shall have a better season next year.—J. H. LEVETT.

County Cork, September 30th.—In the face of so many reports coming in of the bad yield of the honey harvest this year, 'Alba's' echo in this day's *B.B.J.* would go far to raise the cockles of our hearts by showing that there is a silver lining to every cloud, and that, notwithstanding the weather and that bane of Ireland—its political differences, some good can come out of Nazareth, and if left to settle down we may yet become a land flowing with milk and honey. The former we always have had plenty of, and 'Alba' shows that we may be able to get plenty of the latter also, when he, in a bad season, as no doubt his has been, can obtain an average of 77 lbs. per hive. I regret to say that I cannot beat this record, but still I have no reason to grumble when with four hives I have averaged something over 50 lbs. per hive, and a new stock added, being within a few ounces of my last year's average, and still leaving four or five pounds at least in bars that I intend putting (with bees) into another stock, but have not had time to do so, and all this without any spring care in feeding, spreading brood, &c., as I am unable to give them any attention at that time of year. Although my average this year is about the same as last the number of sections taken is twenty-five more than last, chiefly owing to the fact that I worked one hive on Simmins' non-swarming system, out of which I had 43 lbs. in sections and 8 lbs. extracted, besides some more extracted that was mixed with the product of the other hives. This hive did not swarm, but all the others swarmed twice, As with 'Alba' the spring here was very late; for instance. *Arabis albida* did not blossom until the end of March, although it bloomed early in March last year, and the days were generally very cold, which kept the bees at home. Of fruit-blossoms there were absolutely none, and the same remark might be applied to whitethorn. There was, however, a good supply of white clover, and also limes, but very little honey could be obtained from the latter, the weather being very wet and windy during the time they were in bloom. The quantities I had were:—sections, 119 lbs. 13 oz.; extracted, 27 lbs. 8 oz.; and of comb, 53 lbs. 14 oz. By the latter is meant comb in sections, which, being not nicely finished, was not saleable, but was consumed at home, and combs from skeps and from frames without foundation in it, nearly all of which was sold.—Boz.

NOTICES TO CORRESPONDENTS & INQUIRERS.

IGNORAMUS.—1. *Heather.*—The heather at Parkstone in Dorset is the honey-producing kind, and is suitable for bee-pasture. 2. We believe there are other flowers near which bloom early in the year, as we know there are several large bee-keepers in the district. 3. There is a County Society, call the Dorset Bee-keepers' Association, and its hon. sec. is Mr. W. H. Dunman, Troytown, Dorchester. 4. We consider it only a fair place for bees; it is a good place for the disposal of honey, being so close to Bournemouth. Supply and demand regulate the price of honey, like everything else.

IRISH FURZE.—*General Management.*—The skep, weighing 57 lbs., which you purchased at 4*d.* per lb. (19*s.*) may prove dear in the end. It probably contains not more than 20 lbs. of honey, the balance consisting of heavy old combs, pollen of many years' collection, and few bees, which may perish in the winter. In such skeps the queens are generally 'crowded out' from laying, and there being few bees, and these old, with no young to succeed them, all come to grief. Cottagers always take up skeps which are heavy. For uniting, see answer to 'William Mitchell.' We certainly think the *better half* has cause for complaint. Having eleven hives, and being a bee-keeper of five years' standing, we think you should be able to *spot* a queen anywhere. Perhaps if you were to keep a less number of hives, and get a lesson or two from some well-known expert in manipulation and general management, you would succeed better.

H. W. POOLE.—1. *Floor-boards.*—It is not necessary to wash floor-boards before winter, but it is *advantageous* to scrape them thoroughly and to sponge them with salicylic acid solution, after which they should be well dried either in the sun or by the fire. 2. Yes. 3. *Feeding.*—By the ending of September. But if the weather continue fine and warm, feeding may be practised up to the middle of next October.

H. W. D.—*Missing Queens.*—There is no doubt that you missed the queens in the examination. As the bees are carrying in pollen freely you may depend upon the presence of queens. Probably you overlooked brood in its earlier stages, but queens which have laid extensively through the summer may be expected to rear now. Close up your hives for winter as early as possible. Robbing is now rife. Examinations should be made in early morning or late evening.

WILLIAM MITCHELL.—*Uniting.*—1. Ligurians and Blacks may be united as well as any other bees. We never use essence or scent of any kind. If in frame-hives, alternate the frames in the evening and give a little smoke. As a precaution, it is safest to cage the queen. 2. Storing

syrup is not a certain sign of a queen's presence. Ocular demonstration is the only *safe* sign. 3. Mixing bees outside is *safest*, but alternation of frames usually succeeds.

H. L. Worship.—*Bees in Wall.*—Getting out the bees depends upon the construction of the wall. If double, with space between, it is easy to cut a hole large enough to take out comb and bees, and autumn is the best time to operate.

T. B. G.—*Queen removed in middle of August.*—It was far too late to attempt queen-raising, as by the time she was ready for fertilisation, the drones would be gone. You say she has not laid at all. You may, by gently feeding, induce her to lay a few eggs, and if these produce drones she is unfertilised, and the stock must be united to another before wintering.

Mrs. K.—*Cork-dust.*—You had better fill the space between the double walls with cork-dust, which is not only by far the best non-conductor of heat, as proved by Mr. Cheshire in 1881, but does not get mouldy even if wetted, and does not harbour moth or other insects. It is far superior to any other material.

A Derbyshire Reader.—1. *Amount of Sugar per Hive for Wintering.*—It depends greatly whether the 13½ lbs. sugar or 20 lbs. syrup has all been stored, or whether much breeding has been going on. If in the stock of six frames the four outside frames are nearly full, and the others one-third down, it should be enough. Stocks covering only five or six frames now are rather weak for wintering. 2. By all means fill the hollow sides. (See reply to Mrs. K.)

Edmund Clowes.—The combs are exceedingly diseased. The removal of combs is not sufficient. You will find a method of treatment in back numbers of *Journal*. You should have sent a stamped envelope if you desired a direct reply.—F. C.

Edwd. J. Gibbins.—Your queen was not mated, and never would have been; she was utterly valueless. She was not a pure black; the two first abdominal rings being slightly yellow.—F. C.

Coffin Dick.—*Largest Owners of Hives.*—We would direct you to the names of those who are in the habit of advertising in our columns, three of whom proclaim themselves as having 'the largest apiaries in England.' It is very possible that gentlemen having large apiaries would not wish to have their names published in our *Journal*. At the same time it would be interesting, for statistical purposes, to know the names of all the great apiarians in England, Scotland, and Ireland, with the number of hives possessed by each.

Lincolnshire Bill.—The presence of drones so late in the season would incline us to believe that your hive is queenless. But there is nothing like ocular demonstration; and we should advise you to assure yourself by searching for her.

John D. M'N.—We shall be happy from time to time to describe some of the large apiaries in England. Could you prove yourself of service in giving us descriptions of some of those in Scotland?

B. C. W.—The Cowan hive is arranged to take ten to thirteen frames. The number of frames in use is regulated, by means of division-boards, in accordance with the size of the stock, and the season.

B. E. G.—*Planting Bee Flowers.*—Arabis and Limnanthes should be planted now. Wallflowers do best planted in August or early in September, but will flower in spring if planted now, though not quite so profusely as those planted out earlier. Amongst other useful spring-flowering bee forage may be mentioned winter aconite, crocus, aubrietia purpurea, A. græca, anemone hortensis, willow, Iberis sempervirens, myrobella plum, autumn-sown phacelia tenacetifolia, &c.

E. B.—*Sections deteriorating.*—If the sections were removed at different times, the different sources of honey might account for it. If they were all removed at once there seems no reason for it, and your experience appears to be unusual. If some of the honey was unsealed it might become thin by attracting moisture from the air.

O. P. Q.—*Cause of Robbing.*—Exposure of honey outside hives leads to robbing by attracting the bees by its smell, and when once they have tasted it they search for more, even in the hives of weak stocks. 2. The jelly-like substance appears from your description to be honey from heather, which cannot be extracted. 3. Even if robbing was confined to your own stocks it would lead to great loss of life by fighting, and the destruction of the weakest stocks by the strong ones.

T. P., *Devon.*—With the present favourable weather it would not be too late to take a colony of bees from a tree. As much depends on the position of the colony as to the method to be adopted in taking the bees from the tree, we should advise you to have the assistance of an expert in your neighbourhood.

Can any of your readers give me a good recipe for making honey champagne, as I understand it is very good and should like to try it?—H. G. B.

Will you kindly allow me to ask Mr. G. Stothard through your (our) valuable paper how I can protect improvements in hives otherwise than patenting? If I make improvements without, they are quickly taken up by other makers who have had neither trouble nor thought, and I lose the reward due to me as a business man.—J. D. A.

Dumfries Show.—Mr. John McNally informs us that he did not show a honey press as reported in our last.

Correction.—Page 449, line 8, *for* 'H. Ward,' *read* 'H. Wood, Paradise Apiaries, Lichfield.'

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
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Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
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Country Honey Supply, 23 Cornhill, E.C.
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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

SPECIAL MEETING.

It is proposed to hold a conversational meeting of bee-keepers at 105 Jermyn Street, on Wednesday next, 20th inst., at six o'clock. The Canadian bee-keepers now staying at South Kensington, Mr. W. Raitt, and others will take part in the meeting. Persons intending to be present should advise the Secretary, J. Huckle, Kings Langley, Herts.

BEE-KEEPERS AT THE COLONIAL EXHIBITION.

The bee-keepers of Great Britain have good reason to look back on the gathering that took place on Wednesday, the 6th of October, at the Exhibition at South Kensington, with no slight degree of hopefulness and complacency. The primary object of the meeting, namely, to extend the hand of friendship and fellowship to those who in a distant country are occupied in the same pursuit as themselves, was one that would commend itself to all imbued with fraternal feelings. But while this was the principal cause that induced so many to gather together, other thoughts must have flashed across their minds when they contemplated the great number that were present at the luncheon at midday and at the conversazione in the evening.

It seems but a short time ago that bee-keeping was an industry struggling for a bare existence, scarcely known or recognised, disregarded by most people, practised by few; but prescient minds conceived the idea that this industry, so weak and so obscure, might be fostered and become a boon to many cottagers and labourers; and fraught with this view they brushed aside the indifference of those around, and, by dint of perseverance, energy, and tact,—never losing hope, ever marching on, they at length attained their sought-for end. Some that sowed have not reaped,—some have fallen by the way; but still many in our midst that in the past took an active part in this movement can look backward with joy and thankfulness on the results of their labours, and with hopefulness can contemplate the future that still lies before them. The sight of so many bee-keepers thus brought together,—representatives of the respective places in which the lot of each is cast,—will cause them 'to renew their strength,' and with firmer steps and with more determined resolve proceed on their onward way, and strive to overtake their still unfinished work.

The day of the Conference at South Kensington will be one that will ever be remembered by those present on the occasion. The arrangements were most satisfactory. The feelings that predominated in the breasts of British bee-keepers towards their Canadian brethren were hearty and sincere, and those feelings found a ready response in the hearts of those whom on this day they delighted to honour. Though embarked in the same pursuit, there will be, we are assured, no undue rivalry, but both, Canadians and British, will combine with all their strength to extend and increase the industry which they have so much at heart; and we may argue, from the spirit that pervaded the meeting, that these endeavours will not be without their full realisation.

SIXPENNY SECTIONS.

One of the most striking features of the show of Canadian honey at the Colonial Exhibition is the thinness of the sections exhibited, being only $1\frac{1}{2}$ inches, the combs built therein being of worker thickness. Mr. Jones assures us from his own experience,—and it would be a bold British bee-keeper who ventured to compare his own with that of Mr. Jones,—that, contrary to what might be expected from the fact that three vertical surfaces (midrib and two sealings) are required in each inch instead of three in each $1\frac{1}{2}$ inch, a larger harvest is obtainable of this thickness than of the greater thickness to which we are accustomed in the ordinary 2-in. sections.

In our issue of March 1, 1885, in an article entitled 'Sections past, present, and future,' we suggested the very same idea, pointing out that by adopting the size of $4\frac{1}{4} \times 3\frac{1}{4} \times 1\frac{1}{2}$, we could obtain sections of nominal half pound, which could be sold retail at sixpence each. The Canadian sections are as nearly as possible this size. We went on to say, 'We venture to think that before many seasons are passed a sixpenny or half-pound section will be a recognised size.'

The British bee-keepers did not take to the idea, probably because the dealers could not supply the

sections and would not order them. Our Canadian cousins, however, took the hint; and while some of us are complaining of the slow sale of 1-lb. sections at 1*s.*, and have altogether neglected the nimble sixpence, they have been producing these pretty little sections, and here they are before our eyes. When we now see the very thing which was suggested to us in our own *Journal* eighteen months ago, and hear that actually a larger harvest can be obtained in that form, it comes upon most of us as a complete revelation.

We repeat, with great confidence, our prediction of March 1885, and look forward to its fulfilment before another year has passed.

COLONIAL EXHIBITION, SOUTH KENSINGTON.

The British Bee-keepers' Association and the Canadians.

On Wednesday, October 6th, a quarterly conference of the members of the British Bee-keepers' Association was held at the Colonial and Indian Exhibition. Mr. Cowan, Chairman of the Council, presided, amongst those present being a large number of prominent representatives of the branch associations.

Mr. W. H. Ellis, President of the Devonshire Association, brought forward the question of introducing a better honey-producing bee than the Ligurian bee, and said that Mr. Woodbury, who had introduced that bee into this country, had attempted also to introduce the Indian bee (*Apis dorsata*), believing that it was a better bee than the Ligurian, and that, as it was much larger, it would exterminate all the other bees (laughter). Following upon the footsteps of that gentleman, he had done all in his power to carry out the views of that gentleman. He had been promised by Mr. Douglas, who had come to England from India for the purpose of taking back Ligurian bees, that specimens of the Dorsata should be sent over, but he had heard nothing more about it. He suggested that the question should be referred to a small committee for consideration.

Mr. D. Stewart stated that a number of experiments were being made in Canada with a view of improving the indigenous bees. They did not, however, want to exterminate any species, but only to improve them, and by judicious crossing to obtain a better honey-producing bee, one which would be able to tap the red clover.

The Chairman said the subject which Mr. Ellis had raised was a very interesting one, and one which might be very properly discussed this evening when the Canadian bee-keepers would be present and report upon their experiments. He had lately seen Mr. Douglas, who had told him that there were no bees in India which were worth anything at all, and that the *Apis dorsata* was worthless as a honey bee. Whether they were useful for crossing remained to be proved. Mr. Douglas was importing Ligurian bees, as he considered they were superior to anything they had in India. The subject then dropped.

A question of considerable interest to County Associations, namely, the grouping the different county centres for third-class examination purposes was discussed, and a resolution duly passed recommending the same for the consideration of the Examining Board.

The members of the British Bee-keepers' Association afterwards met in the Quadrant, where an excellent luncheon served by Spiers and Pond was given in honour of the Colonial visitors, at which upwards of 100 ladies and gentlemen sat down, amongst whom were Mr. T. W. Cowan, the Hon. and Rev. and Mrs. Henry Bligh, the Rev. G. Raynor, the Rev. F. G. Jenyns, the Rev. J. Lawson Sisson, the Rev. W. E. Burkitt, Miss Eyton, Mr. D. A. Jones (Beeton, Ontario), Dr. and Mrs. May (Canada), Mr. S. Corneil (Ontario), Mr. M'Knight (Canada), Pasteur Descoulayes and Mademoiselle Descoulayes (Switzerland), Mr. W. Raitt, Mr. F. Cheshire, Miss Gayton, Mr. J. M. and Miss Hooker, Mr. A. Neighbour, Mr. J. H. Howard, Mr. T. Blow, Mr. J. Baldwin, Mr. W. P. Meadows, Captain Bush, R.N., Captain Campbell, Mr. F. H. Meggy, Mr. D. and Mrs. Stewart, Mr. and Mrs. Otto Hehner, Mr. F. Lyon, Mr. Sambels, Mr. Henderson, Mr. Lemare, Mr. Garratt, the Rev. Dr. Bartrum, Mr. Horton Ellis, Mr. and Mrs. Zehetmayr, and others.

Mr. Cowan presided, and the Rev. Mr. Scott and the Rev. Dr. Bartrum said grace before and after luncheon.

The Chairman, in proposing the toast of the Queen, said he was sure that the spirit of loyalty to Her Majesty was equally as strong in the hearts of their Colonial friends as in those of Englishmen generally. Every bee-keeper knew that if he wished to have strong colonies he must have a good queen. Fortunately, in England they had a good Queen, and it was during her reign that Britain's colonial possessions had grown to gigantic power and strength. (Loud cheers.)

The Hon. and Rev. Henry Bligh proposed the health of the Prince and Princess of Wales and the other members of the Royal Family. He said that the thanks of all bee-keepers were specially due to the Prince of Wales who was President of the Executive of the Colonial Exhibition, for his kindness in giving the necessary permission for the holding of their recent Honey Show, which was a grand success, and of which the meeting held that day was the outcome. Not many weeks before their Royal Highnesses the Prince and Princess had attended the Bee Exhibition held at Norwich, where they evinced the greatest interest in the wonders of the bee tent. Later on in the year, and in another part of the country, Princess Beatrice had kindly assisted their cause by opening the Bee Show held at Southampton, where she gave the prizes to successful exhibitors. He thought the work in which they were engaged was a national one, —he might almost say an imperial one, for they took the greatest pleasure in labouring hand in hand with their brethren in all parts of the British Empire.

The Rev. G. Raynor, in proposing 'Prosperity to the Colonies,' said he thought the Colonies were certain to be prosperous, because they contained a population possessed of all those characteristics of the Anglo-Saxon race which had shown such wonderful ability for colonising, far greater than any other nation of the globe. When Englishmen looked on and saw the wondrous productions of their Colonies (Greater Britain, as they had been termed) they might well doubt whether the mother country could compete with her Colonies of that day. What the future would develope no one could tell, but when they saw that the Colonies could bring to an Exhibition like the present one forty tons of the most superb comb and extracted honey, it behoved the mother country to look around and exert all her energies to keep pace with her children. The difficulty of doing so was apparent in many ways, and not least when they looked at the productions of wheat grain in the Colonies of Australia and New Zealand—far finer than anything that could be produced in Britain. Thirty-five years ago in Kangaroo Island, which was at the present time devoted to the breeding of Italian bees in their pure state, the Legislature of South Australia prohibited the introduction of any other race of bees in that island. They could boast of nothing like that in the old country. They imported Italian bees, but did not attempt to keep the race pure. He thought it was very likely that the Exhibition would become a permanency, in which event they would, he was delighted to say, have many opportunities of fraternising with their brother bee-keepers from the other side of the Atlantic, which he hoped would tend to

increase the bonds of amity between the mother country and her children.

Dr. May (Commissioner for Education, Canada) said he could not find adequate words wherewith to express his acknowledgments of the kind manner in which the toast had been proposed and accepted of 'Prosperity to our Colonies.' The first thing upon which he must congratulate the B. B. K. A. was that they had a taste for the beautiful, which was evident by the presence of so many ladies at that gathering—a proof that bee-keepers were loyal to other queens besides the queen-bee. (Laughter.) On behalf of the Colonies he was glad to say they were a prospering hive who were proud of their connexion with the parent stock, and far from entering into rivalry they wished to work hand in hand with the mother country. He hoped they would not think him egotistic if he spoke of his own colony in particular. Very little had been known hitherto about Canada in the old country. Canada had been described, only recently, as being fifty miles wide, and separated by a belt of trees from the north pole. (Laughter.) That was an extraordinary statement. The fact was that they had an area of about 3,500,000 square miles, which made their territory something like the size of Europe. They had a climate which was often spoken of as six months of winter and six months of summer. In that section of Ontario from which their friends the honey-producers came, the winter commenced in the latter part of December and terminated in March. If they could draw a line straight across the Atlantic from South Ontario it would be found to strike somewhere about the latitude of Rome. They would, therefore, understand Canada was a tract of land which was very prolific and literally flowing with milk and honey. They were a most hospitable people there, and he was sure that if any of their friends in England would pay a visit to Canada they would find that to be a fact. With regard to the honey of his country, their English friends would be enabled to judge for themselves. There was no doubt that Canadians were a people full of indomitable perseverance and energy. They were not content to sit down and be satisfied with present successes. Mr. Jones, as they all knew, had done very much for bee-keeping. He was called the king-bee in his own country. In spite of his unique position in the bee-world he was not satisfied, because he could not find a bee with a proboscis sufficiently long to enable it to gather honey from all sources. He had been all over the world in search of such a bee which he was determined to find or breed if possible. If they could not discover a bee with the desired proboscis they must endeavour to gain their purpose by giving artificial aid to the little insect. (Laughter.) He then referred to the excellent system of free education which prevailed in Ontario, whereby the sons and daughters of rich and poor were educated alike, by which means latent talent, which was frequently to be met with in the children of the poorest classes, was given free scope for development. They also had a Mechanics' Institute, supported by Government for the instruction of adults. He was sorry his education in regard to bees had been very much neglected, but he remembered that little poem which began, 'How doth the little busy bee,' &c., and if they would allow him to improvise upon that, he would say:—

> Canada is a great country for honey,
> It is there farmers and bee-keepers make lots of money.
> Our bees extract nectar from flowers so sweet,
> That all nations consider our honey a treat.

(Loud laughter.) With regard to the loyalty of the Canadian people, they claim to be no way inferior to their English brethren. Anything that affected the liberty of England was a matter of the greatest interest and solicitude to her children across the ocean, who were justly proud of their illustrious parentage. (Loud cheers.)

Mr. Stewart proposed the toast of the 'Ontario Bee-keepers' Association,' coupling with it the names of Mr. S. Corneil and Mr. McKnight, two gentlemen who, as representatives of that Association, had honoured them with their company that day. He recommended all present not to leave the Exhibition without seeing the splendid display of honey from Canada then on view. They might be quite sure of the courtesy of the gentlemen named. He had experienced it, and was much gratified with what he had witnessed under their guidance. Although English bee-keepers had made great strides of late years, they would still find something to learn from their Canadian fellow-workers.

Mr. S. Corneil said it afforded him great pleasure to be present at that meeting. Bee-keeping in Ontario was quite a new industry. It was only a very few years ago since he remembered noticing in one of the papers an announcement that their friend Mr. Jones was taking a barrel of honey per day. That would be considered a very small affair in the present day. It was, however, only during the last twelve or fifteen years that the industry had grown to such great proportions. He was quite sure that the news of the cordial reception he and his friends had met with from English bee-keepers would be received with gratitude by his fellow-countrymen. Bee-keepers all over the world had a great deal in common. They wished to discuss and compare notes. They were all learners. He had learnt several matters of importance since his arrival in London. With regard to the production of honey in Canada, he well knew that they had climatic advantages, owing to the large amount of sunshine with which they were favoured during the summer months. Their climate was everything that could be desired for the secretion of nectar in the flowers. The assistance rendered by bees to the agriculturist was well appreciated in his country. They gathered the finest honey from the clover fields, and the farmers found from common observation that when their farms were close to a large apiary of bees, their fields yielded them far more seeds per acre than would otherwise be the case. Thus the bees conferred a double benefit on man; so much so that most farmers took to bee-keeping in order to increase their crops of clover seed. In Canada there were only five or six millions of people. They were scattered over a very large extent of territory. Hitherto Canadian bee-keepers had kept at home all the honey they produced. In Britain there were a great many more than five million people, and having heard that honey was constantly being imported from other countries into England, the bee-keepers of Canada thought that whatever profits were to be obtained by imports, friends might as well get them as strangers. They had therefore come over in the hope of securing a small share in the advantages of the honey trade.

Mr. McKnight desired to thank the British Bee-keepers' Association in the name and on behalf of Canadian bee-keepers for the splendid entertainment afforded to their delegates. They recognised the right hand of fellowship extended from the mother country. He could tell his audience that he and his friends would carry home the most pleasing recollections of the way in which they had been entertained by the bee-keepers of Britain. They, as representatives of the Ontario Association, came over to show what their country could produce. Their land was veritably the Canaan of America flowing with milk and honey. If anyone doubted that, let him make his way to the honey exhibition, where he would find conclusive evidence of the fact. They came over to make glad the hearts of their own mother England. Every mother ought to be proud of her offspring, and it must afford her gratification when they conducted themselves in life so as to win her approbation. He was sure that England

must be proud when she saw what they had been doing beyond the seas. They had proved that they had not been lying on their oars, and in fact that they had added as much to the glory of Great Britain as her soldiers and sailors had done in years past. They had made primeval forests to disappear, and in their place raise up the fruits of the earth. Those were the battlefields on which their victories had been fought and won, and it required a stout heart to engage in those fights. It was an old saying that bee-keepers are a very fine class of people. (Laughter.) Well, there was no question that they possessed some excellent characteristics. Their pursuit necessitated a large amount of moral courage, patience, and perseverance. One seldom found a successful bee-keeper to be a cross-grained and bad-hearted man. Possibly the reason of this was that he had a peculiar being to deal with, and one who would defend its home and property with Spartan courage. (Cheers.)

The Chairman regretted the absence of Mr. Petitt, the President of the Ontario Bee-keepers' Association, who had been obliged to leave that day. Before his departure he requested the Chairman to express his cordial acknowledgments of the kindness of the B.B.K.A.

The Rev. F. Jenyns said he had been asked to propose the health of those who were amongst them as visitors, and whose presence added much to the pleasure of the gathering. He trusted they would do their best to carry into their respective districts a knowledge of what they had seen and heard that day. The meeting was honoured by the presence of two distinguished visitors, namely, the Secretary of the Swiss Association, a most advanced bee-keeper, and also the president of the Devonshire Association, whose connexion and relationship with Mr. Woodbury would alone entitle him to the respect of all bee-keepers. He felt sure all present would be able to look back on that day with happy remembrances, for it was a remarkable day, not only for the pleasure it afforded to so many bee-keepers of coming together, but because it showed the wonderful development of their favourite industry, which, upon a retrospect of a few years, one would hardly have believed possible. That was a source of great gratification to the B.B.K.A., to whose efforts that result, to a large extent, was due. Of course, they could not but be delighted to find that their objects and aims had spread so far west as Ontario. He hoped that meeting would tend to promote the good work in which they were engaged, and strengthen the bonds of friendship which he believed existed among all bee-keepers.

Pasteur Descoulayes (who spoke in French), Secretary of the Société Romande d'Apiculture, said it gave him the greatest pleasure to be able to be present, and to thank them on behalf of himself and other visitors present. He said the bee-keepers in Switzerland were greatly indebted to their Chairman (Mr. Cowan) for much information, always willingly given by him at all times personally, and to his writings. He was well known and appreciated by the Continental bee-keepers. He compared the B.B.K.A. to a large and strong hive that did its work well.

Mr. Horton Ellis also briefly acknowledged the toast, expressing his great pleasure at being present on so memorable an occasion; he added a few words to the effect that he looked forward to the time when an improvement of the honey-bee might take place, by means of judicious crossing of the breeds, possibly the Indian with the Ligurian.

The proceedings in the luncheon-room being adjourned, the guests were conducted to the honey-show in the Exhibition, where the magnificent display of Canadian honey, exhibited by twenty-seven members of the Ontario Association, was inspected, there being about forty tons of comb and extracted honey.

At five p.m., the members of the B.B.K.A. held a Conversazione in the Conference Hall, which was well filled by a large assembly, including the Colonial delegates. The principal item on the agenda was Mr. Jones' interesting explanation of the system of bee-keeping and appliances now in use in Canada. His remarks were listened to with great attention, frequent applause interrupting the delivery of them. After tea and coffee had been served, Mr. Cowan took the chair, and introduced Mr. Jones to the meeting.

Mr. Jones said it afforded him very great pleasure to meet so large an audience of English bee-keepers, and he earnestly wished the highest possible success to the B.B.K.A. He looked upon that body, with its branches, as the greatest bee-keeping Association in the world, comprising as it did upwards of 10,000 members, with a staff of experts and assistants of about fifty, to instruct cottagers and others in bee-keeping. It was far in advance of anything they had in America. He believed that the members of all the bee-keepers' Associations in America combined would not equal the members of the B.B.K.A. alone. He was not so much at home in making a speech as he would be in talking about the management of bees. He had not had time to collect his thoughts, not knowing until a short time previously that he would be called upon to address them at that moment. He thought the members of the B.B.K.A. deserved a great deal of credit for the able manner in which they had conducted the Association, and the excellent management it had been controlled by from the commencement. He was happy to find this opportunity of saying that the Ontario delegates wished to present to the Chairman, as a token of respect, a sample of the best honey brought from Canada. It was also with a great deal of pride and pleasure that they tendered a similar offering to the worthy President of the Association, the Baroness Burdett-Coutts. He was sure that he only expressed the opinion of himself and all his fellow bee-keepers in Ontario when he said that nothing would please them more than to meet as many of their audience as possible in Canada. He did not know whether they could treat them as kindly and as nobly as their fellow-workers in England had treated the Canadian representatives, but they would do their best. He was sure that he spoke the feelings of his fellow-countrymen in saying that their stay here would ever form one of the happy recollections of their lives.

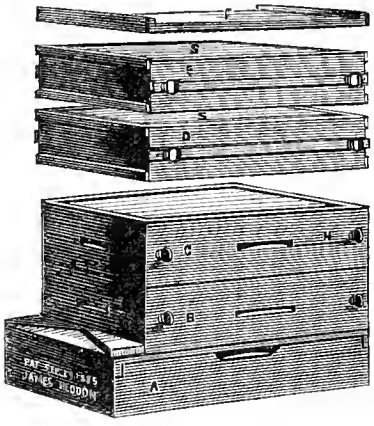
The Rev. Dr. Bartrum said, when the Chairman told him at luncheon that there were to be no speeches after four o'clock, he for once began to realise the story of Cinderella, and when the magic hour arrived he thought his duties as a speaker had ended. However, he cheerfully obeyed the call of the Chairman, and it was with the greatest pleasure he begged to acknowledge the kindness of Mr. Jones' remarks in reference to the B.B.K.A. It was a source of pleasure to them whoever proposed success to the Association, but when that commendation came from one who represented a colony like Canada, which proved itself inferior to none in bee-keeping, then he felt sure that all those who laboured in the Elysian fields of apiculture would feel that their cup of happiness was full. It was a common thing for people to say that Britain was played out, but he thought that the capabilities of the old country for honey raising were as good as those of any country in the world. He often saw honey said to be imported from Switzerland, which was sold in England and abroad, and often put on the tables of hotels at home and abroad, and miserable trash it was, very different from the Swiss honey produced by M. Bertrand, which was of the most exquisite quality. Nevertheless, he thought England had a distinct advantage over Switzerland in honey-producing, because of the superior crop of clover and limes in the former country. The results of skilfully directed efforts had shown distinctly that England

could produce enormous honey harvests; their Chairman had produced 200 and even 300 pounds from a single hive, not in one instance only, but in many cases. The increase of honey produce of late years had been remarkable. For one pound produced ten years ago one hundredweight was now obtained. He knew these to be facts from the experiences of his own neighbourhood. That wonderful progress in apiculture they owed chiefly to the B.B.K.A., and to several earnest men who had devoted a considerable portion of their lives to the furtherance of the aims of the Association. Amongst these they must not forget the name of their late lamented friend the Rev. Herbert Peel, whose energy, public spirit, singleness of purpose, and devotion to duty, were well known. Then there was Mr. Abbott: and as their Canadian friends looked back to the time of their pilgrim fathers, so did bee-keepers look back to those who had laid the foundations upon which later workers were able to build. They could not forget what Mr. Abbott had done in the dark days. Then there was their friend Mr. Cheshire, and he was sure that the B. B. K. A. were proud and delighted to welcome him once more amongst them. They all recognised his great ability, which had been devoted to their cause for many years. Then he must recall the memory of Mr. Hunter, and also not forget their friend Mr. Hooker. He dared say there were other names that ought to be thought of, but he must not overlook the gentleman who occupied the chair. In their friend Mr. Cowan they had a rare combination of qualities devoted to bee-culture, and to the work of the B. B. K. A. Both in his capacity of Chairman and private individual, and as the author of valuable works which are being translated into different languages, and as the editor of their paper, he was engaged in a noble undertaking. He had much pleasure in wishing health, long life, and happiness to Mr. Cowan. (Loud cheers.)

The Chairman said he did not expect or deserve the compliment so kindly passed on him by Dr. Bartrum, but he heartily thanked that gentleman and his audience generally for the kind way in which they had received those remarks. With regard to what Mr. Jones had said and done he begged to say that they were very pleased to receive their Canadian brethren, and to extend to them all the neighbourly and brotherly feeling they could. He desired to express his best thanks to Mr. Jones and the other gentlemen for the handsome samples of honey they had given to him, and it would be his business to see that the specimens also kindly submitted to their President should be placed in that lady's hands. He hoped that many others besides himself would have an opportunity of passing an opinion on the imports of Canadian honey. He was especially grateful to the Canadian bee-keepers for the way in which they had spoken of the B. B. K. A. He remembered with pleasure that it was only twelve years ago since the Association numbered about 150 members, whereas now, with its affiliated Associations, amounting to something like forty-two, upwards of 10,000 persons were enlisted in its ranks. That showed remarkable progress. It was not surprising, taking into account the enormous increase in the produce, that some bee-keepers had a difficulty in disposing of their honey. Their Canadian friends had taught them a lesson in that respect. They had shown them the value of offering small quantities for sale at cheap prices which found ready purchasers, and thus begat a demand for the article. He was surprised but glad to notice that they even sold tins of honey at as low a price as 2*d*. He had no doubt that the action taken by the Canadian bee-keepers would give an additional fillip to the industry in England, and on that account they were very much indebted to those gentlemen. They argued that the public, who came and tasted the honey for nothing, would buy a twopenny tin perhaps, and the next time they visited the place probably they would purchase a sixpenny, or even a larger tin. These cheap rates were a capital means of getting at the poorer classes. He was sorry that these gentlemen had not come to their show in August, and although the British bee-keepers had not the same large quantity of honey to show there was a much larger variety of flavour. He hoped the Canadians would carry away some new ideas with them. He had travelled a great deal, but had never been anywhere but what he could learn something. He again heartily thanked them all, and would always remember that meeting, which he thought would form a bond of union amongst the bee-keepers of the two continents, and friendships which nothing but death would part. He also said there were other veteran bee-keepers who had not been mentioned. Mr. Raynor should not be forgotten, as he had done an immense deal for bee-keeping. Mr. Bligh was at the start, for he attended the first meeting ever held.

Mr. Jones then proceeded to give a description of the Heddon hive, an adaptation of which with several improvements was now the most popular hive in Canada. He said the Heddon hive consisted first a stand, next a bottom board, then two shallow brood-chambers, then two section cases, and the lid. The brood-chambers were so constructed that they were reversible, and invertible, or exchangeable. The supers were also invertible. They were of the right size to hold $4\frac{1}{4}$ sections, and could be constructed to hold sections of any width. The supers had frames in them of the right size to hold four sections each, and by means of a small screw which pressed against the end of the section frames they were crowded so tightly together, that when inverted they would remain in position. This was considered a great advantage, because sections only partially filled and capped when inverted, would be completed much more perfectly than if allowed to remain in their first position, and the work would be done in a much shorter time. There was a half bee-space between the frames and edges on both top and bottom of the supers, and brood chambers. This half bee-space when inverted or exchanged always left one bee-space between brood or section frames. It was claimed by the inventor that this combination of principles adapted as it was to exchanging, inverting, or reversing, had superior advantages, enabling the bee-keeper to manage his bees more successfully, and with much less labour than usual, especially in the production of comb honey. The new, or later Heddon hive got up on the same lines, had many improvements. For instance, the brood-chambers and supers were of different sizes in the Heddon hive, the brood-chambers being about half an inch deeper than the supers: while the improvement referred to consisted in making the brood cases and supers the same size, each holding frames $4\frac{1}{4} \times 4\frac{1}{4}$, inside measure. Thus the apiculturist by the new or improved hive could use either the brood-chambers for supers, or supers for the brood-chambers, the frames being the same size in both instances. That improvement would be apparent when it was remembered that it was unnecessary to have so many appliances as were usually kept in order to carry on the production of both comb and extracted honey. By this means there was no occasion to hold any dead stock. Another improvement was in the manner in which the hive was constructed, being only $\frac{3}{8}$-inch thick instead of the ordinary thickness, which was usually about $\frac{3}{4}$ or $\frac{7}{8}$-inch. But when it was taken into consideration that the ends of the frames were $\frac{3}{8}$-inch in thickness, screws at the sides pressing them tight together made two thicknesses, that is, $\frac{3}{8}$ for the outside, and $\frac{3}{8}$ for the ends of the frames, with a scant sixteenth dead-air space between the two, it would be seen that the hive was made much warmer and safer for wintering in than it would be when constructed of the ordinary thickness, dryness being one the principal requirements in connexion with safe wintering. When the honey harvest commenced, the brood-chambers were separated, the queen being driven by a few puffs of smoke into the lower brood-chamber. There

was then a perforated metal and wood queen-excluder honey-board placed over the lower brood-chamber, thus preventing the queen from entering the sections which were placed on immediately over the brood-chamber. The other brood-chamber was next placed on top of the sections, thus causing the sections in the supers to be in the centre of the hive. Half the brood being below, and



half above them, caused the bees to go to work in the sections at once, and labour more vigorously to fill up the vacant space thus created. As fast as the brood issued from the top brood-chamber the bees filled it with honey, and when filled and sealed after the honey season was over it might be used for winter stores. There was another advantage he must mention, which was that the system he advocated prevented the queen from carrying on excessive breeding during the honey flow. It was very injudicious to raise a large number of bees at that time which necessarily consumed a large amount of stores which ought to be taken in their surplus. Those bees hatching just after the honey harvest was over were too old to go into winter quarters. Thus, they virtually became consumers instead of producers; whereas, if the energies of the queen were suppressed, and she was only permitted to carry on breeding sufficient to keep up the mortality of the hive during the honey flow, and afterwards allowed to carry on breeding more vigorously a larger number of young bees would be thus secured to go into winter quarters, and of course would be of more value in the spring. The ease with which comb honey might be taken by this new arrangement, which was almost automatic in its management, enabled the bee-keeper to take charge of nearly double the number of colonies, thus making it possible for him to produce honey at much less expense and leaving him a larger profit for his labours. Another important feature was that the queen-cells were all built on the bottom of the comb projecting down, so that they could be removed if necessary at any time by inverting the brood-chamber, the inversion being sufficient to destroy the queen-cells. Some people practised inverting every three or four days to destroy the queen-cells, and prevent swarming; but he found that unnecessary with proper management. In conclusion, he invited a discussion on the merits of the hive, and would be happy to answer any questions.

Mr. Garratt asked whether the inversion should be done at any specific time; and, if so, when?

Mr. Jones replied that inversion might be done as soon as the cells were fully drawn out and filled with honey at the top, producing full sheets of foundation, and the comb was attached sufficiently to the section to prevent its lopping over when so inverted. He had inverted even before any capping was done, but he would not recommend inversion until the comb was fully drawn out to the top of the section and filled with honey. His experience was that bees did not suffer from cold, and that he had wintered bees even without a floor-board.

The Chairman said those who were old readers of the *Bee Journal* would remember, some ten years ago, a letter by Mr. Hunter, who found a hive wintering perfectly well without a bottom board, but that was not a system that the Association could recommend. Still, those who were anxious to do so should try the Heddon hive on a small scale. They must always remember that the English climate was a moist one, and therefore the strength of outer casing was an important consideration.

Mr. Blow wanted to know something about the non-swarming properties of the hive, and he asked whether the bees would not swarm out if crowded down in one brood-chamber.

Mr. Jones said experience proved that, so long as the bees had plenty of space in the sections and brood above, they were not inclined to swarm; but if they did attempt to do so it was only necessary to place the queen-excluder board on the bottom board, which gave the bees access to the hive through the queen-excluder, while the queen was unable to leave the hive to swarm.

In reply to the Rev. Mr. Raynor, Mr. Jones said that the Ontario honey season lasted from about the middle of June to the 1st of August.

Mr. Jones said another important point in connexion with the production of comb-honey was brought out by the fact that brood-sections of 2 inches in width were common in Canada at one time, but their use had now been discontinued, practical experience proving beyond question that sections of $1\frac{3}{4}$ inches or $1\frac{1}{2}$ inches would be filled and capped in much less time and in much nicer condition than the broader ones. It was asserted that much more honey could be secured by the use of the narrower sections, and in better shape, and there would be many less unfinished sections remaining in the apiary at the end of the season. The reversing of sections caused them to be completed in a much shorter time than by the ordinary system, and, as stated before, he strongly recommended it.

In answer to Mr. Baldwin, who contended that English bees preferred to build sections of 2 inches, and even larger, in the place of smaller ones, Mr. Jones said he would venture to prophesy that there would be more people adopting $1\frac{1}{2}$-inch sections in five years' time in England than there were now using sections of 2 inches. It was natural for bees to build the ordinary width of brood-comb, and there was a limit to the width they liked to build. The further man tried to get rid of their natural instincts by making them build wider combs, the less they were inclined to fill the sections properly, which caused bulging and irregular structures. It was stated by some that narrow sections required more capping, but he had found that he secured more honey, which was the great object he had in view.

Mr. Garratt asked what should be the size of the entrance to the hive, and Mr. Jones replied that the entrance should be the full size of the front of the hive during the honey flow.

In reply to an inquiry, Mr. Jones said that quilts were not necessary with the Heddon hive, the frames being next to the lid, leaving just a bee space between the top of the frames and the under side of the lid. The bee space should never exceed $\frac{3}{8}$ inch.

Mr. Lyon asked whether in the event of two or three days rain the water would not penetrate between the tiers? To which Mr. Jones said that the coating of propolis placed on the inside by the bees would effectually prevent saturation.

In reference to a remark made by Mr. Sambels, Mr. Jones agreed that the Canadian hive embodied some of the principles of the Carr Stewarton hive.

The Chairman exhibited and explained the working of an instrument invented in Switzerland for securely fastening foundations in wire frames.

Mr. Jones said that a good many people wanted to know how they in Ontario managed their queen business, and he exhibited a new queen-nursery, which he had used with success, and appeared to have valuable features about it. The contrivance would very shortly be manufactured by several leading Canadian supply dealers. It consisted of twenty cages, each holding a queen, where she might be kept in safety in any hive for weeks, or months if necessary. He had had frequently a hundred queens, and more, in a hive where the old queen was laying, breeding going on in the ordinary way, and he had kept them there for weeks without loss.

Mr. Cheshire asked if the queens would not be killed under such circumstances; to which Mr. Jones replied that the cages were so constructed that the bees in the hive could not reach the queen. A few bees were put in the cage with the queen to feed her.

A gentleman stated that he had put a queen in a cage very similar to Mr. Jones's on the top of a bar-frame hive, and soon after found her to be dead.

Mr. Jones said that he had had a similar experience in reference to one queen that had cost him a considerable sum of money. That queen came from Palestine. He placed her in a wire-cage sixteen meshes to the inch, and on examining her after a couple of days he found that the bees from the outside had got hold of her wings, feet, and legs, and had gnawed them off half way. That might occur where the queen had not sufficient room to move about.

Mr. Meggy asked whether the bees shut up with the queen would not attack her; to which Mr. Jones replied he had never known such an instance. In every case he traced the queen's death to bees on the outside.

Mr. Sambels asked whether Mr. Jones had ever tried Mr. Simmins' method of direct queen introduction; to which Mr. Jones replied that he had tried it, but not with sufficient success to pronounce an opinion on its merits.

In reply to other questions Mr. Jones said that sections should be slotted on all sides in order to obtain the best results, for by this means the bees were enabled to pass either up or down, or crosswise, with as great ease as they did over an ordinary comb, and they worked with more vigour when not cooped up in small apartments. Supers when tiering up during the earlier part of the honey flow should always be placed under, raising the partially filled super of sections on top; but during the latter part of the season when the honey flow begins to wane if supers are added they should always be placed on top. That would enable the bees to fill the lower supers first, and should any more honey be gathered than is required it will be placed in the super above.

The Chairman proposed a vote of thanks to Mr. Jones, and trusted that he would not think any of the questions asked were idle ones. British bee-keepers were anxious to learn, and he hoped that their Canadian friends would find some information to take away from them in exchange for the valuable hints supplied by Mr. Jones.

The Rev. G. Raynor seconded the motion saying he had always been anxious to know the principles and working of the Heddon hive, but never fully understood it till that evening.

Mr. Jones briefly acknowledged the compliment.

Mr. Horton Ellis would like to hear the opinions of the Canadian gentleman on the possibility and utility of crossings, for the purpose of obtaiuing a larger and more industrious bee. Perhaps this end could be attained by crossing the Indian bee, which was one-third larger than ordinary size, with the Ligurian.

Mr. S. Corneil said, that in Canada they had been unsuccessful in that direction.

Mr. Jones had made an attempt at something of the kind with the *Apis dorsata*, with the result that he had only a few specimens preserved in alcohol. Other races had been pretty widely disseminated. He had found that a Syrian crossed with an Italian produced a very good honey-gatherer; but as regarded increase of size and length of tongue their record in Canada was *nil*.

Mr. Cheshire questioned whether much advantage would be derived from increasing the size of the honey-bee. The bee and the flowers from which it gathered its food were mutually related, and were no doubt the result of the principles of natural selection which had been going on for ages. He thought there was no doubt the size of the bee was established for the best; and if they had a bee of double size it would be necessary to increase the size of the blooms from which it got its food. He had found that the best working bees were those of a smaller size.

The Rev. G. Raynor said that there was no doubt that the humble bee gathered honey from many flowers on which the domestic bee could not work.

Mr. Jones was of opinion that it was useless to hope for any results by the crossing of the *Apis dorsata* with other breeds.

Mr. Raitt (Secretary of the Edinburgh Association) thanked the B.B.K.A. for the kind welcome they had given him that day. The system advocated by Mr. Jones was the one upon which he worked. The hive exhibited with a little increase in depth might pass for his own. He wanted to introduce honey into every home in England, Scotland, and Ireland. He exhibited samples of heather and clover honey, and also a Russian log hive. With regard to Scotch honey, the further north one travelled the better was the flavour of the honey.

Mr. Jones said that a fine quality of honey was obtained from limestone hills.

The Chairman endorsed this remark, and said that there was no doubt but that the quality of honey was governed in a great measure by the nature of the soil.

Mr. McKnight said that they had no heather-clad hills, and that so far as heather-honey was concerned Scotland would retain its pre-eminence. But after all the flavour of honey was only a matter of sentiment and cultivated taste. The Scotchman believed in no other whisky but his own, and the Irishman had a similar prejudice. No doubt the Scotchman in Canada preferred the taste of the honey from his own country, partly because it brought to his mind a recollection of his own heather-clad hills; but it only required an experience of the aroma of the white clover honey of Canada to destroy that prepossession. He had come to this country with a prejudice against Englishmen, not gained from experience, but from what he had heard of them. He had been told that he could not reach an Englishman with a ten-feet pole—(laughter)—but he was glad to say that all those notions were dispelled. He was delighted with his sojourn in London, and he should go home to Canada with the most pleasing recollections of his visit. (Cheers.)

Mr. St. John Gunn said that he had one hive on top of his house which was 360 feet above sea-level, and he noticed that the honey in that hive was of a distinctly different colour to that obtained in his other hives on the ground. He had no doubt that difference of soil affected the quality of honey.

Mr. Jones specially invited his audience to pay a visit to the honey-house, where he would be happy to show them its contents, and give them every information thereon.

The Hon. and Rev. Henry Bligh expressed his thanks to Mr. Jones and the other gentlemen for the valuable and interesting information they had supplied.

The Chairman exhibited a pair of gloves, made of American cloth, which were recommended by Italian bee-keepers for use in the manipulation of bees by those ladies and gentlemen who are afraid to use their bare hands.

Mr. Jones said that black gloves were not quite so

good as coloured ones, and recommended brown holland gloves, dipped in linseed oil. He said that it was useful sometimes when manipulating with bare hands, to cut all the hair off the backs, which, singularly enough, irritated the bees.

Mr. Lyon said he always took good care to do that himself by singeing, but found it made the hair grow faster.

Mr. Jones said he had already learnt a great deal, but he was nevertheless anxious to take as much more information as he possibly could of English systems over to Canada, and he would therefore be glad to hear any descriptions of the English models and inventions he saw displayed about the room.

Mr. Hooker showed a reversible frame hive, the position of the frames being kept by metal ends at top and bottom. With two screws at the side all the frames could be clamped together, and the hive reversed bodily.

Mr. Andrews, of Hertford, showed some drawings explanatory of the anatomy of the bee.

Mr. Neighbour explained the principles of his improved hive to Mr. Jones, and the meeting broke up into small knots, the different appliances being examined and opinions passed thereon in a free and general conversation.

Selected Query.

[630] *Do Ligurians, Syrians, Cyprians, or blacks collect honey or pollen from common red clover (Trifolium pratense)? If so, have you noticed whether they collect most nectar from the first or second crops? What is the quality of the honey and the colour of the pollen?*

The perennial red clover, or 'cow grass' (Trifolium pratense perenne), which is usually found in old pastures, blooms earlier than the other kinds. Have you noticed bees upon it?

Trifolium incarnatum. What is your opinion upon this as a honey-producing plant?

Ligurians and blacks collect honey from the red clover (Trifolium pratense). The first crop is richer in nectar than the second. Blacks visit the second crop more than they do the first. I have noticed that those flowers of the first crop that receive any attention from the blacks are usually dwarfed or malformed heads of this species of trifolium. The quality of the honey is excellent, and colour of pollen light yellow.

The perennial red clover is not much patronised by the hive bee, but humble bees collect honey from it.

I have had several acres of trifolium incarnatum under strict observation for the last two seasons, and in my opinion can confidently say that it is far superior as a honey-producing plant than red clover. Bees work on this clover with the same energy and perseverance as they do on the white. The seed should be sown in August or September, when it will bloom the first fortnight in June, but unlike red clover, it will not produce a second crop of flowers. It yields abundantly, makes capital hay, which is much relished by all kinds of stock.—Hy. Dobbie.

I have often watched fields of red clover when yellow bees, presumably Ligurians, were at work upon the blackberries in the hedges, and seen none visit the clover. On trifolium incarnatum both yellow and black bees work well. —F. Lyon.

Trifolium pratense.—It is not generally understood that the first crop of red clover is in itself so thin as to be practically useless either for hay or bee forage. Yellow trefoil is mostly sown with it, and that blooms for nearly a month before the first (mixed) crop is cut, and without it the earlier clover would be of little use. After the first cutting, the clover branches out much thicker, and the second crop soon shows a dense mass of bloom, upon which Ligurians, Syrians, and Cyprians will work in favourable weather, storing a surplus one year in four, and collecting some honey nearly every autumn. After the first cutting the clover stands alone, as the trefoil does not come again. The varying conditions of soils, as also the state of the atmosphere during the second growth of red clover, has much to do with the conflicting reports regarding this plant, which should by no means be cultivated for bees, but every endeavour should be made to have it superseded with alsike, which the hive bees can work thoroughly, while the former does not yield to them one-tenth of the nectar it secretes. Alsike clover will also continue good on the same ground for a number of years, but the red will not give a full crop again, and fresh seed will not germinate on the same ground until it has been free from the plant for seven years. The honey is very similar to that from white clover; a little stronger in flavour and not quite so thick. Pollen, dark brown.

Trifolium pratense perenne.—We have a great quantity here, but no hive bee has been seen upon it.

Trifolium incarnatum is among the very best honey-producing plants, and all races work freely upon it. With the early and late varieties a very good succession can be gained. Honey of good quality and colour.—S. Simmins.

1. Yes. Both honey and pollen. None by the blacks. Quality of honey excellent, with a reddish tint. The most honey from first crop. Pollen is rather dark in colour.

2. Yes.

3. As a honey-producer, is only of medium value, say 35 per cent.—R. MacNally.

Ligurians, Syrians, or black bees do not collect honey or pollen from common red clover (Trifolium pratense) except from the small blooms, as the petals in the fully-developed blooms are too deep for the proboscis of the honey bee to reach the honey.

I have not noticed bees working on the fully-developed bloom of the perennial red clover.

Bees work on trifolium incarnatum, or Italian crimson clover, but they do not get any great amount of honey from it. Of all the clovers for the honey bee none can be compared to the white Dutch clover (Trifolium repens). —William Carr.

Ligurians, Cyprians, and Syrians collect honey from second crops *only* of red clover. Blacks in a less degree. My sections have been filled up from this source during the present season.

I have never been able to discover any race of domesticated bees collecting from first crop of Trifolium pratense nor from the 'cow-grass.'

Trifolium incarnatum is an excellent honey plant, from which all races of bees gather abundantly.—G. Raynor.

I cannot speak as to the races of foreign bees, but I know from extended observation that English bees very rarely visit the 'red clover,' especially the first crop, but on the second crop, or aftermath, I have noticed them gathering pollen (of a greyish colour). I cannot speak as regards the colour of the honey, never having had sufficient income of it to get a distinct sample. I have not seen bees working the 'cow-grass' blossoms. I had a large field of it adjoining my apiary in '85, and never saw a bee on it, although I watched many times.

The trifolium incarnatum I consider one of our best '*early*' bee plants, the colour of the honey nearly equals the white clover, and the flavour is good, very similar to the sainfoin honey. I regret our farmers do not plant more of it, as it would increase our honey-harvest by a fortnight. —Wm. Woodley.

Bee Industry.—The industry of the bee may be estimated by the average number of its daily excursions from the hive to collect provisions. According to Reaumur, if the total number of excursions be divided by the total number of bees in a hive, the average number daily made by each bee would be from five to six. But as one-half of the bees are occupied exclusively with the domestic business of the society, either in nursing and tending the young, packing and storing the provisions, or constructing the combs, the total number of excursions must be divided, not between the whole, but between only half the total number of bees, which would give ten excursions to each individual of the collecting class; and if the average length of each excursion be taken at three-quarters of a mile, this would give the average distance travelled by each collector at fifteen miles!—Dr. Cumming.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

CANADIAN HIVES.

[631.] I was much interested with the explanation Mr. Jones gave of the Heddon hive. I gathered that his experience of it extended over one year only. He said that only one quarter of a crop of honey had been produced this year in Canada, but he did not say how much that was per hive, so that we could judge of its merits. I had hoped that we should have had some information as to the hives used by the exhibitors who sent the forty tons of honey shown. If it is not too late could not Mr. Corneil and Mr. McKnight give a description of their hives? The Chairman called on Mr. Corneil to do so, but, unfortunately for us, his hive was not in the room.

It would be much more interesting to us bee-keepers to know something of the hive in general use, and its capabilities for honey production, than the probable usefulness of a hive not yet tried. As a novice I should certainly hesitate to adopt any other but the standard frame until I know it has been more successful.—Novice.

BEE PASTURAGE.

[632.] During the past season this important subject has attained a very considerable amount of interest among bee-keepers, and it is now a recognised fact that even in Scotland where abundance of clover, heather, and fruit blossoms exist, much can be done by intelligent experts to provide seasonable pasturage for our little friends at the very time it is most required.

We have also now attained a very prominent position throughout the country, (specially during the past two years) in the way of amalgamation with the many horticultural societies who now look upon our 'hobby' as one of their most interesting departments. This is one of the points I advocated some time ago in the *Bee Journal*, and it is a matter of satisfaction to find that the experiments are proving highly satisfactory to both gardeners and bee-keepers.

The 'Caledonian' has for years offered medals for the best collection of bee flora, but I believe the first competition took place this year which we have ever had, seeing we had four large collections exhibited by four competitors. Two previous years there were only two entries and both were shown by the same party, hence no competition. This year, however, with the assistance of Mr. Henry Dobbie, I undertook the arrangement of several new features in the collections, and we were rewarded in our efforts by securing first and second honours. From these remarks, and my interest in horticultural matters, you will understand that any suggestions I venture to offer are given with the practical object of trying to make this class a special feature in every association and one likely to prove useful to every class to bee-keepers.

I may state that in my own entry I was able to stage one hundred blooms of cut flowers all more or less suitable for bees, and also nearly two hundred varieties dried and in pots. Such exhibits undoubtedly add beauty to a bee-tent, but my impression is that they entirely fail in the object they have in view. I can fancy an amateur bee-keeper trying to find out of a few hundred dried plants the information he requires, will generally leave disappointed.

Mr. Henry Dobbie and Messrs. Sutton and Son have each produced condensed and useful collections of bee flora, and I cannot see any reason why in the same way such collections might be exhibited in bloom; and certainly a list like the following would commend itself to every horticultural society, while bringing within reach of the amateur bee-keeper information which he can easily put to the best advantage.

Class I. For the best twenty-five specimens of British bee flora in a dry state or otherwise with full particulars. II. For the best fifty specimens of bee flora in a dried state or otherwise, with full particulars. III. For the best collection of bee flora in bunches (not dried), with full particulars.

I trust these remarks will enlist the favourable discussion of this interesting subject.—E. McNally.

MORE EXPERIENCES.

[633.] My experience of hives at heather is similar to that of 'South Bucks' in a recent *Journal*. About the same time (July 30th) I extracted three frame-hives pretty closely, and carried them off to the heather. I put on sections, thinking that, as heather honey cannot be extracted, I would obtain some comb honey. I examined last evening, and found that the bees had in each hive stored about 20 lbs. of sealed honey, but had never entered the sections. I put strips of American-cloth, two inches wide, all round to prevent propolisation of the bottom of section-box to tops of frames, and it was interesting to note that the bees were clustering in the form of a hollow rectangle under the strips, leaving the comparatively open space covered by the sections almost untenanted.

Here is another 'experience,' concerning which I shall be glad to hear the opinion of any of your correspondents who may deign to cast their eye upon it. I try to prove all things in bee-keeping. One of my three stocks was a swarm hived about a fortnight before, on old combs, tied into frames which I had made 'reversible' by means of Rudge's Reversible Ends. These combs the bees had fastened securely, the tapes and laths had been removed, and the combs built down almost to the bottom bar. As soon as this hive of six frames (kept small on purpose) was settled at the heather, I reversed. But bees are occasionally very stupid. Instead of carrying up to the sections what honey was in stock, and what was collected since, they took and altered the inclinations of the cells, and the sections are as empty as in the other two hives. The comb in the sections was worked out before the crates were put on, and there was a little honey in some as an inducement to commence business at once. Is this a fair test of reversible frames, or shall I try again under different conditions?

I do not remember to have seen in the *Journal* directions for uniting driven stocks carried home in skeps to bar-framed hives. I am aware that it could be done satisfactorily by brushing the bees off the frames into another skep, shake and spray; tumble the driven bees in among them, spray and shake up together; and, finally, tumble the united lot on tops of frames, or on a board sloping up to the entrance, and let them run in. This is too troublesome. In performing the operation lately I compromised the matter. I took out two frames with bees, separated the combs and sprayed between. Then I shook the bees off two frames on to the bottom of hive, and those on the two frames previously removed on to a board placed before the entrance in the usual way. These last I sprayed, and tumbled the driven bees from the skep on top of them, and let all run in together,

still spraying a little as they scampered in. I closed up for the night. Next morning I found to my grief and surprise that there had been terrible war in the interval. The entrance was choked and the floor-board covered with dead bees.

Like your other correspondents, I have not seen a single wasp this autumn. In former years they crowded round the hives at the time of feeding up for winter in swarms. I cannot help admiring your wisdom, Mr. Editor, when you predicted early in the year that this would probably be the case.—EXTRACTOR, *Athy.*

A VOICE FROM THE WEST.

[634.] 'John Peel' would certainly like, for special reasons of his own, to obtain a first-class certificate, but he is precluded from entering as a candidate by the inflexibility of the rules of the British Bee Association, and the fact that his County Association is defunct.

'Amateur Expert' is wide of the mark when he thinks 'John Peel' covets the 'extra lustre'—whatever that is—which the parchment gives. He is sufficiently lustrous already. Why does 'Amateur Expert' in his pleasant little article poke fun at those judges who in the bee-tent adopt the sensible habit of tucking their trousers within their socks? Has he yet to learn that bees, when frightened and demoralised, invariably ascend, and the motto of a bee who has crept up to your ankle or knee is, 'Excelsior?'

Mr. Abbott must pardon me, but here again *Experientia docet.* The rhinoceros-like cuticle which some experts, amateur and otherwise, rejoice in, is not possessed by every judge who enters a bee tent.

With respect to County Associations I am inclined to think that in some cases the fact of their having ceased to exist is no proof of the decline of bee-keeping in the county; but, on the contrary, it implies that the object for which the Association was formed has been achieved, and the knowledge of bee-keeping has been diffused throughout the length and breadth of the land. Such is the case in my neighbourhood. Two years ago there were only about half-a-dozen skeps within a radius of two or three miles of any house. I can now reckon up over a hundred—most of them bar-frame hives. Without joining the Association, the more intelligent cottagers have adopted the modern method; and to such an extent that I have long ceased to give lectures and urge bee-keeping upon my neighbours. We are now engaged in the grim game of 'the survival of the fittest,' and it was with mixed feelings that I heard the other morning that my strong hives had eaten up three July swarms of a neighbour—the last of the skeppists.

We—not this year, but ordinarily—find it difficult to sell our honey. I had an idea of assisting our village apiarians by disposing of our united stores to the British Honey Company, which was established, as every one knows, with the benevolent intention of aiding the British producer to the disposal of his honey, and thus exclude the foreigner. Delusive hope! The sample was duly acknowledged as number So-and-so, and I was informed a price would in due time be quoted. I have waited two long summers and that quotation has not yet come. I am beginning to think it may never come, and that we had better look elsewhere for customers.

So far from wishing others to become bee-keepers, I verily believe we should stone out of the place any enthusiastic humbug who should come to urge others to take up bee-keeping. We have long got beyond that stage. On a summer's day the air is literally thick with bees. No, our Association died because its work was done—the fruit was ripe and it fell.—JOHN PEEL.

BEES KEPT IN LONDON.

[635.] As some interest now attaches to our metropolitan bees, it may not be supererogatory to report concerning the hive in Bermondsey, the only one so far as the writer knows in this district. From January to May the bees were fed regularly with a syrup reduced from loaf-sugar according to a well-known and common practice. This hive was set up in October, 1884, and though a swarm was looked for during the summer, and a straw hive from our 'Neighbour' provided for such a contingency, no swarming took place. The honey this season was late, but of a much improved, namely, a lighter colour, than last year. We realised eighteen pound sections, and some fine wax, the combs of which were not filled.

The bees appear to be in the healthiest possible state. As to the facilities which these bees have for their necessary food in order to their honey-making, the writer must leave that question to the more experienced who know how far they will fly to get what they want. The factories by which they are surrounded being principally connected with leather, indiarubber, and biscuits, would certainly afford them no sustenance; neither are they seen much upon the flowers of the garden in which they have their home. Some neighbours, however, having a plot of ground, have noticed their visits, especially when the crocus has 'peered up with its bright little head.' Southwark Park is little more than a mile distant, and in this densely crowded district there are doubtless many little oases with their nectar sweets of which the bees freely avail themselves.

Whether the aristocratic bees of South Kensington visit the sugar refineries—as suggested by your correspondent (613), page 453, of which now there are but few, and with one exception all in the East end—while there must be such scope for their tastes in the gardens and parks of the West, it may not be easy to determine; but certainly these working class bees upon the flowers of whomsoever they may feed (according to an old theory) add only virtue and sweetness to the same. As one of our own poets has also said:

'Bees work for man; and yet they never bruise
Their master's flower, but leave it, having done,
As fair as ever, and as fit to use;
So both the flower doth stay, and honey run.'

J. E.

BEES NEAR LONDON.

[636.] The incredulity of your correspondent respecting Mr. Firth's honey harvest at South Kensington prompts me to give you my experience this year in the north of London. I live in Stoke Newington, and last autumn had three stocks in very weak condition. They did not cover more than three frames each, but I left them for the winter with six frames to each stock. When I examined them this spring I found them rather weaker still, but with plenty of stores remaining. Towards the end of May I united the two weakest, and by middle of July had two good strong stocks. These have yielded me eighteen 5 × 4 and sixteen 4¼ × 4¼ sections. I have taken besides six sealed frames of comb of Abbott's old standard size. After draining sections and combs, I find my net yield of honey is fifty-one pounds from two hives. This average of 25½ lbs. contrasts favourably with your correspondent's, and makes an average of 37 lbs. from good strong stocks at starting appear quite probable. I may add that I have not fed my bees.—N., *Oct. 7th.*

A SWARM OF BEES IN OCTOBER.

[637.] On Tuesday, the 5th of October, at 8.30 a.m., on visiting my apiary, I found the bees in a great uproar; thinking something wrong, I found to my surprise a swarm of bees had clustered on the front of one of the hives. I at once proceeded to hive them in an ordinary skep. They only remained a few minutes, and came out again. I put them in the skep again, and then proceeded to

prepare a makeshift bar-frame hive in readiness, with combs filled with syrup. By this time, the bees were all out again, and clustered on the hive-front. I then placed the makeshift hive on top of the hive they had clustered on, when they all ran in as fast as they could go, but not to remain, for they were soon all out again. I again hived them, with the same result; this time the queen not coming out. I found her balled on the bottom of the hive. I then parted the bees where the queen was, and took her away from them, caged her in a pipe-cover cage, and fastened it on to one of the combs. Being then called away, I did not return to them for two hours, when I found they had returned to the hive. The cause of their being so much troubled was owing to my bees attacking them and killing half the number.

The bees had evidently flown away from some place of refuge, either from some hive, tree, or building; not having any stores had gone in search of some; must have come from a long distance, as they are hybrids: I do not know of any of this kind of bees any nearer than six miles.

The bees in this neighbourhood are working vigorously at the ivy now, it being a splendid time for the bees for preparations for winter.—F. G. Ayling, *Alton, Hants.*

MANIPULATING TENT. (579.)

[638.] Mr. C. Kingsford's letter contains a promising suggestion. I have tried to realise the Manipulating Tent, and make it out to be an oblong, but what is the covering? 'The whole is covered with canvas . . . . I am independent of weather.' The covering is therefore waterproof; but if so, how is light obtained? The back, probably, is a kind of curtain of canvas, bee-tight, or nearly so. Having so readily made known his successful use of the tent, I feel sure Mr. Kingsford will give us the benefit of this further explanation.—Thomas Fisher, *Sidcup, Kent, Oct.* 2, 1886.

BEES REFUSING TO UNITE.

[639.] About a month ago I found one of my stocks had dwindled considerably in numbers. I thought the queen was lost, but on examination I found a small portion of brood in all stages. I then concluded that she must be a bad layer (though only three years old), and was determined to remove her and unite, but could not find her when I went to look. I did unite, however, by transferring combs and bees of a swarm I got on 4th July into the dwindling lot, putting the transferred bees at the back of the hive, and sprinkling both with syrup into which a few drops of essence of cloves had been put; there was very little fighting, not fifty bees killed. Now comes the extraordinary part of the business. I have examined them repeatedly since uniting, and I find that both lots are apparently as distinct now as when they occupied separate hives; the old bees crawl about in the same listless manner as they used before being joined by the others, while the latter are as frisky and as 'full of sting' (there is about a fourth Ligurian blood in them) as bees ought to be. The old (dwindled) stock is a swarm I got in May 1885, they were then put into a combination hive on full sheets of foundation, and, for a swarm, did very well last year. This year I got a little over twenty sections from them.

I have examined the combs carefully and can find nothing wrong, and have kept a careful look-out for a rejected queen, but have not seen one.

Could any of your readers account for this objection on the part of the bees to unite? The past season has not been at all a favourable one here. With an additional stock I did not get half the quantity of honey I got last year.—Mangerton, *Killarney.*

SHOWS (605.)

[640.] It is to be hoped the views of Mr. Seager and Mr. Walker may be taken up by the B. B. K. A., and that they will arrange some system of points for judging honey which may be acceptable to all County Associations, and which, in my humble opinion as an exhibitor, would make the duties of the judges easier and materially help and guide exhibitors to take their finest honey to the Shows. As Mr. Walker truly says there will be grumbling (or cause for grumbling, at all events) so long as the same exhibits take different places at different shows when judged by different judges. I give a case in my own experience. I exhibited extracted honey att Stafford County Show held at Wolverhampton, July 21s to 23rd, taking silver medal and first prize; again at Gnosall, August 9th, taking first prize: and again at Lichfield, September 25th, where the same exhibit (which had also taken second at South Kensington) was placed second, the first going to the exhibitor who was third at Wolverhampton and second at Gnosall. The judges were different at each show; whether any of them were indifferent, as Mr. Walker remarks, I cannot positively say.—Elihu Clowes, *Blackbrook, October 4th,* 1886.

QUEEN INTRODUCTION.

[641.] I should like to bear witness to the success o Huber's method. I have tried it several times, always with success. On the last occasion a very interesting little episode occurred which is perhaps worth narrating. As usual I placed the queen on the alighting board and watched to see what reception the guards gave her. She was at first received with apparent pleasure, but began wandering about, missed the hole, and was wandering away. She was followed by one of the guards who, growing impatient at her conduct, mounted her back and appeared to sting her. She then returned to the flight-hole, and immediately on entering it the guard dismounted and joyfully fanned her in. She has gone on well since. Mr. Raynor appears to have been unfortunate, but I think he will find the system worth trying again.—J. Rudge.

Foreign.

FRANCE.

(*Continued from p.* 426.)

I will not now refer to the many hives made up of drawers or fancy compartments, such as Nutt's for instance, and others; they had already been discarded by the practical bee-keeper.

It is evident that Radouan aimed at large hives, although he was unable to arrive at any definite plan in particular, probably he was merely bent upon making experiments without entertaining any conviction as to their real merits. Nor could he, at the time, base his calculations upon the facilities afforded to us now by artificial comb foundation for the rapid development of our colonies, as it was unknown in those days. Still, he was certainly guided by some idea or purpose, whatever this might have been.

Soon after came the introduction of the supers in crate-form with combs placed at about thirty-eight millimetres from each other. This arrangement, permitting as it did of the shifting and removal of combs in sections, without deterioration and free from contamination with brood, was another step gained on the ladder of progress. The honey crop now could be brought home without difficulty, and the combs thus obtained were in every way presentable for table use. But the plan was not yet thoroughly worked out, and there were, in connexion therewith, drawbacks which required yet to be overcome.

To these there was to be added the narrowness of these new supers, as, like Radouan's, they were only thirty-three centimetres inside diameter; and the addition of several nadirs in succession constituted too tall a hive. In it, air could not circulate with any degree of freedom, combs became black very soon, and there was always a great retention and accumulation of moisture.

Every improvement which was attempted in those days had, in a larger or smaller degree, these defects. Conscious of this state of things, Monsieur Beuve and myself resolved some considerable time ago upon transforming our narrow hives by giving them the required width and means of ventilation. See *La Ruche*, p. 61. Their lower diameter was increased to thirty-nine centimetres; all frames in the brood chamber were done away with and only retained for the upper tiers or boxes intended for the production of honey-comb.

But, however rational these successive improvements were, they could not yet meet the requirements brought into existence by progress. Bee-keeping on a large scale absolutely required an abundance of comb accommodation; there was no getting over this. Now, bees could not devote more time nor greater energies to comb-building without compromising in a proportionate degree the honey crop; the point was, therefore, how to provide the one without sacrificing the other. It naturally followed, that it occurred to us that one way out of the difficulty was, the preservation of good worker combs, instead of destroying them. The recognition of this necessity led to the studying and subsequent discovery of the slinger, and from that day forward, all our practical men extracted their honey from the supers or top boxes, retaining the combs intact for subsequent use. This will show the gradual steps by which the nadir hive came to be one of the so-called 'Mixed System,' that is to say, half with fixed and the other half with moveable combs. The one I have now been using for several years past, and which is giving me complete satisfaction, consists of one single body, free from all internal complication, and will hold from forty to sixty litres, according to the strength of the colony by which it is stocked. But it is divisible into either two or three compartments of about thirty-nine centimetres inside measurement, and about seventeen high. The top chamber or super box is furnished with moveable bar frames, whilst the two underneath ones have only two wooden cross bars inside, intended to bear and keep steady the combs. In the springtime, when bees commence getting active, I place one of these super-boxes with moveable bar-frames on the top of every strong colony, the combs of which are built down to the floor-board.

When swarming time arrives, these top boxes will either serve as supers for the in-coming surplus honey, or they can be given to swarms to which they will take readily.

Thus, this hive, notwithstanding all its simplicity, lends itself readily to every requirement of a practical apiary, such as swarm-making, transferring, uniting, and so forth.

While some of our practical men were endeavouring to improve the usual fixed comb-hives, others were trying to revive the moveable bar-frame system, the principle of which can be traced to the ancient Greeks, if not probably further back. Thus, Messrs. Langstroth and Quinby in America, Messrs. De Berlepsch and Dzierzon in Germany, and Debauvoys in France, were the first on the field.

These leading men were soon surrounded and followed by others. The first steps taken were not well defined; others stepped into the arena, and one and all of them did their best to contribute his small addition of improvement suggested by the early conception and original idea. The result was a confusion disheartening even to the warmest enthusiasts; but, as usual, when an idea is good, it is sure to make its way. Just as in the nadiring system: it was not long before the principle upon which constructions of this kind must be based was discovered, viz., plenty of room for the brood to develope itself in, means of contraction and of expansion when required, and prevention of propolisation to a convenient extent.

It would not answer any practical purpose to dwell upon the merits and demerits of each pattern brought before the public. We have now some of them which are excellent in every way, and among which I may mention Quinby, Dadants, and G. de Layens. These are the best known and the most reliable that we have in France.

In conclusion, the two systems of hives we have just reviewed are based upon the same principle, that is, plenty of room for the brood and means of extension and contraction. They are, consequently, the most likely to give good results from the point of view of profits.

If the moveable bar-frame hive is the most suitable of all for certain specialities, such as the rearing of brood on a large scale, the study of bee life and bee habits; if it offers the appreciable advantage of subdivision and of interchangeability; if, in a word, it lends itself to all practicable requirements, as well as to the caprice of science, then it follows that it should be exclusively the one to recommend for a progressive culture. Besides, if this hive gives us large profits, it is certainly not because it contains frames which can be removed or replaced whenever required, but rather because of its naturally large size, and the means of much greater extension which it affords.

On the other hand, we must bear in mind that side by side of these advantages there are certain drawbacks which it is as well to take into account. Its square shape and its weight render it unsuitable for migratory culture. Again, transferring by tapping on the sides, so much practised with our common hives, is not convenient here, as the queen oftentimes will hide herself into some of the numerous corners to be found in a bar-frame hive. The wood of which it is made is not so healthy as the straw; dampness, all other things being equal, is greater in a bar-frame hive, and the danger of excessive summer heat is more to be feared in them than in straw hives.

The handling of frames is not always so easy as it is generally supposed. Propolisation, although greatly reduced, will often be so obstinate as to require a steady and practical hand. From time to time we find irregularity of combs, requiring a certain amount of knack to straighten them. The smell of disturbed propolis, and of honey running away when operating, attract bees from other stocks, and induce robbing.

Another consideration is its high price, the various implements which it requires, thus making it too expensive for the poor cottager. Now, the supering or mixed hive does not, of course, present such facilities for observation purposes as the frame-hive, but it has the great advantage of being less complicated, of being simple in its construction, more handy, and yet sufficiently applicable to any practical operation. Its cylindric shape is very convenient for carrying away to fresh pasturage; it is certainly very convenient for transferring bees by tapping; and in it bees cluster better in winter. The clustering being more compact, bees are, as already stated, less exposed to the effect of cold, and will not starve, although well supplied with honey, because they cannot reach it. Then, when spring comes, breeding is stimulated in straw hives by reason of its uniform heat. Consisting, as they do, of two or three straw bodies, the space can be reduced as much as desired. This will economise time and work to our bees without detriment to production. But, like its competitor, the bar-frame hive, it is not faultless: it is not perfect.

For queen-rearing, for instance, it cannot be com-

pared, from the point of view of convenience, with the bar-frame hive. With it we cannot shift combs as we should like; its round form renders this operation out of the question. But is this a very great drawback after all? What prejudice can this cause us? Can we not, again, do without the advantages afforded by the supers in crates? As for the renovation of combs in the body boxes, this is done by the removal of one or more of them when we want to take the honey. As for feeding, nothing could possibly be imagined that could be easier. It is true that, comparatively speaking, hives on the mixed system cost somewhat dearer than the common straw hive; but then let us take also into consideration the difference of profits that can be derived therefrom. —A. VIGNOLE, *Bulletin de la Société de l'Aube*. (*Translated from the Apiculteur of Paris.*)

THE SONG OF THE BEES.

Flying out, flying in,
Circling the hive with ceaseless din,
Now abroad, now at home,
Busy through wood and field we roam.
Here in the lily-cup, there in the clover,
Gather we sweets the meadow over.
Food to our young we carefully take;
Pollen we bring, and wax we make;
A band of us shapes each tiny cell,
Another follows, completing it well.
Working all, working ever,
Suffering idlers among us never,
Never pausing to take our ease,
Oh, busy are we, the honey bees!

Flying out, flying in,
Circling the hive with ceaseless din,
Now abroad, now at home,
Cheery we stay, and gaily we roam.
Never too hurried to greet a brother,
With feelers crossed we talk to each other;
Never too selfish to share our stores;
Some seek them abroad, some use them indoors;
Unitedly guard we our homes from harm,
Stationing scouts to give the alarm.
So, working all, and working with will,
Providing in summer for winter chill,
Whirring and buzzing, nor caring for ease,
Oh, cheery are we, the honey bees!

Flying out, flying in,
Circling the hive with ceaseless din,
Whether abroad, or whether at home,
Loyal we stay, and loyal we roam.
In royal apartments our queen-bee is reigning;
We render our homage unmingled with feigning;
Lowly we bow as we pause by her side,
The choicest of food with her we divide.
Thus working all, and working with heart,
Each striving good to the whole to impart,
Busy and cheery, we think not of ease,
And loyal are we, the honey-bees!

Flying out, flying in,
Circling the hive with ceaseless din,
Whether abroad or whether at home,
This lesson we teach wherever we roam:
Mortal, like us, go labour unwearily,
Work with thy kind, and work with them cheerily;
Duty fulfil, wheresoe'er thou may'st owe it;
Where honour is fitting, fail not to bestow it;
It matters not whether at home or abroad,
Be faithful to man, and be loyal to God.
Thus work thou well, and work thou ever;
The lessons we teach thee thou may'st not dissever;
Be busy, be cheery, be loyal—for these
Are the truths thou may'st learn from the
honey-bees!—*Child's Companion.*

GLEANINGS.

The *American Apiculturist* says:—'Apiculture viewed in the broadest and most comprehensive sense, has a far deeper meaning than the mere keeping of bees, and the more intelligent and thoughtful apiarists are beginning to deem it an honour to be reckoned among those who are students in this branch of apiculture. The time will yet come when we shall be able to give a scientific explanation of the causes and conditions which govern this* and other departments of apiculture, so that we can proceed with the same certainty as to the results as characterise other industries and vocations.'

In the *Botanisches Centralblatt*, of Prague, Vol. XII., J. Velenovsky, states 'that the honey-glands in Cruciferæ correspond not only with the form and nature of the fruit, but also with the habits of the plants. The honey glands are emergencies from the receptacle and depend upon the form, size, and structure, of the parts of the flower. This development depends upon the suppression or otherwise of the stamens. All the species contain honey glands.'

In the *Elsass-Lothringischer Bienen-Züchter*, C. Zwilling says, 'that a novice may recognise a hive that is being robbed by catching a few bees which fly out of the hive and by pressing these, and if the stomach contains honey the colony is being robbed. To know from which hive the robbers come powder them with flour as they leave the hive, watch and examine the entrances of suspected hives, and it will soon be seen which hive they enter. This is the robber hive.'

In the *Bulletin d'Apiculture de la Suisse Romande*, M. Ed. Bertrand writes:—'It is well known that all the bees of the Italian race have not got the three yellow bands of the abdomen equally and distinctly marked. This I have substantiated on several different occasions. At Ornarasso, at Golasecca, and at Milan, there are colonies only showing two bands. In 1881, at Milan, at the Sartori establishment, I saw drones as destitute of any yellow bands as any drones bred by our black bees. But abroad, three bright yellow bands are considered an indispensable sign of purity, hence the reason why Italian breeders, while attaching no real value in work to the colour of the rings, endeavour to have no bees in their apiaries that will not show three bright bands.

In the *American Apiculturist* it is urged that more importance should be given by queen breeders and honey producers to rearing and selecting the drone bee. The qualities, good or bad, and the peculiarities of any colony of bees are more likely to be transmitted to the offspring by the drone than by the queen bee. Hence it will be seen that if a particular colony possesses any desirable quality one wishes to preserve, the bee-keeper should see that his queens are mated to the drones of the colony possessing such qualities. For instance, supposing there is one colony in the apiary possessing the three good points, docility, good honey-gathering, and non-swarming, and another colony whose bees are strong, hardy, and winter well—now these are all desirable points, and it would be hard to tell which colony possessed the best. Well, instead of having the young queens mated haphazard, that is, by any drone in the apiary, why not rear queens from the one colony and mate them with drones from the other? Breed out all the bad qualities and the result will be better bees, more honey, and larger profits.

In the *Bulletin de la Société d'Apiculture d'Alsace Lorraine* to destroy ants A. Hoff recommends placing tumblers half filled with syrup, or honey diluted with water, in different parts of the apiary. The glasses must be covered with perforated gratings so that the bees cannot enter. The ants are drowned in large quantities, and the liquid must be renewed when it is filled with them.

* The laws which govern the production of nectar in plants are here alluded to.

The *American Planter and Stockman* says that America is far behind several countries of Europe in the art, chiefly in the form of information and instruction that has been afforded bee-keepers. So fully does the German Government appreciate the value of apiculture, that it pays teachers to travel about the country instructing the peasants in the art of bee-keeping. Instruction in the natural history of bees, and in their management under domestication, is given in public schools, and candidates for teachers are required to pass a satisfactory examination in practical bee-keeping.

Bee Phenomena.—Very important and highly interesting discoveries have been lately made on this subject which enable us easily to account for hitherto unexplained phenomena in bee-life. It is well known that the honey of our honey bees when mixed with tincture of litmus acquires an unmistakably red tint, a fact no doubt owing to the subtilised formic acid it contains, the presence of which acid likewise imparts to the raw honey its power of 'keeping' for a considerable length of time. Honey which has been clarified by means of water and exposure to heat—the so-called 'syrup of honey' spoils more easily than the ordinary kind, because the formic acid in it has in a great measure been expelled. The honey of very fierce tribes of bees has a peculiarly acrid taste and pungent smell; this is due to the excess of formic acid contained in such honey. Till lately, complete ignorance prevailed as to the manner in which this so essential component of honey, formic acid, found its way into the substance secreted from the stomach or 'honey-bag' of the busy workers: recent discoveries have, however, enlightened us on this point. These show us that the sting serves the bee not only as a means of defence, and sometimes of offence, but possesses likewise the almost more important power of infusing into the stored-up honey an antiseptic substance, not subject to fermentation. It has been lately observed that bees in hives, even when left undisturbed, from time to time rub off against the honey-comb, from the point of their sting, a tiny drop of 'bee-poison;' in other words, formic acid. This excellent preservative is thus little by little introduced into the honey. The more irritable and vicious the bees are, the greater the quantity of formic acid conveyed into the honey by them, a sufficient admixture of which is essential to the production of good honey. The praise, therefore, that has been so often lavished by adepts in such things on that indolent member of the bee-tribe, the Ligurian bee, which hardly ever stings, is, in point of fact, misplaced. The observation just made above will explain, too, why the stingless honey-bee of South America collects but little honey, for it is notorious that when trees have been felled which have been inhabited by the stingless 'Melipone,' but little honey has been found in them. And, indeed, what inducement have the bees to store up honey that will not keep, since it contains no formic acid? Of the eighteen different kinds of North Brazilian honey-bees known to naturalists, only three possess a sting.—From the *New Zealand Public Opinion*

Echoes from the Hives.

Kirklandhill, Dunbar, N.B., Oct. 7.—My report for this year is a pretty good one, taking all things into consideration. I commeneed this year with three bar-frame hives and three Stewartons, and worked on the non-swarming principle for comb honey. One of my bar-frame hives lost its queen on the 26th of April, and the young queen was not fertilised till June 9th, consequently this hive did not give me so much as the others; in fact, only 20 lb. sections. From the six hives I got a total of 300 lbs. super honey, and a lot of frames of honey, which I intend keeping till next spring in case of need, though there is not much probability of its being required. But not having an extractor, and not caring to break the combs, I don't see what else to do with these filled frames. Honey has been rather difficult to sell, especially the Stewarton's, which formerly were most easily disposed of; but people are beginning to like the sections best. The heather honey harvest was not great this year with me; I only got an average of 10 lbs. per hive, and neighbours are equally bad, or rather worse, as I have heard of no neighbour who has got so much. I have had awful work trying to get Ligurians introduced into my apiary. In October of last year I bought two queens from different dealers. One queen died in the cage, which was made something like Cheshire's; the other queen was safely introduced: but, lo! in the spring her produce were only hybrids. I think that she was not fertilised till after I got her. She was bought as a guaranteed pure, fertile, imported queen from a large dealer. When I wrote to him about it, he coolly sent my letter back to me again with not a single word of explanation. However, this year I have again made a trial. In July I got two from Mr. Simmins, and tried his No. 1 method. The first time I failed, owing to there having been *two* queens in the hive. Second queen I safely introduced to a very wicked stock, and now the hive is almost all Ligurian, and beautiful they are. I have just sent off for another Ligurian, and also a Carniolan queen, so I will have another trial yet. My winter stock consists of five bar-frame hives and three Stewartons. Two of these hives being condemned, bees put on filled frames. Altogether, I am well pleased with my hobby. I have had a shorter or longer trial of pigeon, canary, rabbit, and even poultry fancying, but have given them all up in disgust, because it was all work and little pay; but I am, indeed, well pleased with bee-keeping. Being on a farm where work is stopped at 6 p.m., most of my apiary has to be sorted after dusk at this time of the year. I will be very glad if this is any help to brother bee-keepers situated as I am.—George D. Clark.

P.S.—Wasps are very plentiful this year, far more so than last.

Sussex, Mayfield, October 11.—I am afraid this year has not been a very successful one with me. I commenced bee-keeping with four skeps (blacks), and this year transferring to four frame hives in the beginning of May, and as a result, after expending altogether (bees, hives, appliances, &c.,) about 8*l.*, have four fairly strong stocks of black bees and one of Italians, all in frame-hives; one strong stock, with unfertile black queen, in makeshift frame-hive, and two weak lots of condemned bees on frames, one in makeshift hive, other in twin hive. Total amount of honey, about 20 lbs. Is this an unusually poor result for a first year? My knowledge of bee-keeping is entirely acquired from books and the *Journal*.—J. B. S.

[Your honey harvest has been but small; but we hope that the interest you have felt in bee-keeping, and the experience you have gained, may in some degree compensate for the trouble you have taken. Let us trust that your harvest next year may be more satisfactory.—Ed.]

NOTICES TO CORRESPONDENTS & INQUIRERS.

Neophyte.—*Suspicious Appearances in Comb.*—The larvæ have suffered from ordinary putrefaction since the comb was removed from the hive, and this makes any determination by the microscope unsatisfactory. I have no doubt whatever of its being *bacillus alvei*, but to be certain I have made a cultivation, and if not corroborated will communicate further in next issue of *Journal*.—F. C.

F. C. Hodgson.—*Chilled Brood and Foul Brood.*—Chilled brood has no more to do with foul brood than whooping-cough with hydrophobia. Foul brood is the result of the growth and multiplication within the bodies of the bees and larvæ of *Bacillus alvei*, an organism having very curious and distinct properties, and in the absence of this bacillus this special disease cannot exist. At the same time it should be remembered that any cause of weakness or disturbance predisposes to disease attacks, because when the disease organism presents itself its impact is not so readily resisted, and it gets a hold upon a colony which would in high condition have immediately thrown out the first suffering larva. Foundation is not expensive, and bees draw it out with as little labour as would be involved in clearing out the chilled brood. It a question in economics for you to decide. That the

bees will clear it if the comb be given to them in the spring is certain.—F. C.

R. Watson.—*Race of Savage Bees.*—The five workers and two drones from the colony you describe as ultra savage are evidently almost entirely blacks. Two of the workers and one of the drones, however, have characters which show some taint from one of the Eastern races—Syrians, or Holy-land, bees possibly, although this is a mere guess, since leather-coloured Italians would have impressed the same peculiarities. Use creosote or carbolic acid in your smoker, pouring a few drops on the burning material, or handle them with the carbolic spray, and they will treat you with respect, and possibly improve in their general behaviour to this end. Never touch them without conquering them completely, but should they be permanently troublesome by all means requeen them in the spring before they raise drones.—F. C.

Beeswing.—*Time for removing bees a quarter of a mile.*—Any time between end of this month and February will do. Unless the weather should be unusually open bees will not be likely to find their way back.

T. Fenton, jun.—*Treatment of Foul Brood.*—You can do nothing now, except put a piece of camphor tied in muslin in each hive. When breeding commences in spring, remove all stores crowd the bees closely, and feed with syrup containing Cheshire cure. If they are likely to get short of stores, give candy containing the cure as advised in the directions accompanying the bottle. You had better get your neighbour to treat his bees in the same way, or your bees will very likely contract the disease from his by robbing or visiting.

S. King.—1. *Feeding Condemned Bees.*—You should have completed this before now, or given them ready-filled combs. You can, however, continue to feed as long as the weather remains open until they have had 25 lbs. of syrup; give it as thick as possible; watch them, and by turning the frames about get them drawn out regularly. 2. *Proportion of Salicylic Acid.*—Take 1 oz. acid, 1 oz. borax, 4 pints of water. Of this solution add 1 oz. to every 10 lbs. sugar employed, this is equal to 6 grains acid to 10 lbs. sugar.

R. Middlebrook.—1. *Packing for Winter.*—If you use American cloth place it next the frames, and over it a thick cushion of cork-dust, or a section rack, having the bottom covered with calico and filled with cork-dust. If you use a board put an ordinary quilt of ticking, then a piece of carpet or flannel, and on that the board. 2. *Material for Smoker.*—Tobacco-paper is too strong and also too expensive. There is nothing better and cheaper than touchwood.

Honey Squeezer.—*Queen Introduction. Fertile Worker.*—We would recommend you to cage the queen alone on a piece of cardboard, and keep her thus caged for thirty minutes—under cover of course. Lift one corner of the quilt, give two puffs of smoke, and let her run in. Let this be done in the evening, and do not look again into the hive for some days. As for the fertile worker, do not trouble yourself respecting its presence.

J. B. S.—1. *Uniting.*—Bring the hives close together by degrees, well smoke them, and place the frames of the weak hive alternately between the frames of the hive you wish to retain. You can leave the entrance open unless there is robbing going on. 2. *Unsealed Syrup.*—Yes; it is liable to ferment and produce disease in the bees. 3. *Removing Unfertile Queen.*—The unfertile queen must be removed before uniting, or you run the risk of losing the fertile one.

Basil.—*Metal Ends.*—The samples of metal ends would require the cutting of a groove in the frame, but the principle is very good. We prefer the heavier make. The dimensions determined on by bee-keepers have been the result of much experience.

W. S.—*Moving Bees twelve yards.*—Move your hives only a yard a-day, not reckoning the days on which the bees are unable to fly.

L. W. K.—*Selection of Hives.*—We recommend that you should use the standard frame. The majority of the hives advertised are good; but which is the best is a matter of choice.

Business Directory.

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Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
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Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
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METAL ENDS.

Abbott Bros., Southall, London.
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COMB FOUNDATION.

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Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

IMPORTANT NOTICE.

County Secretaries and candidates intending to compete for second-class certificates are reminded that this examination will take place on Saturday, November 13th. Candidates should give early notice to their County Secretary of their intention to compete.

We are requested to state that the Medals awarded at the South Kensington Exhibition, together with the Special Commemorative Medals, are in course of preparation, and will be forwarded to the Exhibitors as soon as ready.

THE GROUPING OF COUNTIES FOR THIRD-CLASS CERTIFICATES.

The above subject was introduced by the Secretary of the British Bee-keepers' Association at the last meeting of the representatives of affiliated Associations at their meeting at the Conference Hall, South Kensington, on the 6th inst. It is a subject of considerable importance to those who aspire to the possession of a third-class certificate, and it is reasonable that every facility should be furnished them to carry out their praiseworthy and legitimate desires. If the proposition that has been put forward be adopted, it will undoubtedly prove itself to be far more efficient and satisfactory than that at present in practice. Up to the present time these examinations have, with few exceptions, been held in connexion with the annual show of the B.B.K.A., or some local Horticultural show; and we regret to say that on many occasions the results have not been such that one could look back upon with any feelings of satisfaction. The management of an exhibition is, as a rule, quite sufficient of itself to absorb the attention of the secretary during the whole time it is continued; more especially is this the case in a one-day show. Competition among exhibitors is now much keener than in former times, and the attention of the judges is more continuously occupied and is kept at severer tension; and it frequently happens that the day is far spent before the judging is concluded, leaving but scant time for conducting the examinations with any possibility of doing justice to the examiner, the candidate, or those who are in charge of the arrangements. It is not, therefore, to be wondered at that just complaints have from time to time arisen. The examiners have recommended that some alteration should be made in the matter so that they might be enabled to perform their duties in a more perfect manner than the present arrangements would allow. We have in remembrance one occasion when the examination proved an entire failure owing to the difficulties we have above pointed out. This is a serious matter to those candidates who have undertaken long journeys and consumed much valuable time in attending at the time and place designated for the examination, and who have been obliged to return home with the object of their journey unaccomplished, and with a keen sense of injustice at their loss of time and money and the fruitlessness of the trouble they had taken in their preparation for the examination.

We feel assured that all this might be avoided by the simple method of grouping together (say) six counties, or more, and arranging for an examination to take place in each county in such group on successive days, much in the same manner as H. M.'s inspectors take the examination of the elementary schools. We will suppose, for example, that the following counties have been grouped together,—Berkshire, Wiltshire, Somersetshire, Dorset, Devon, and Cornwall. The whole of these counties might be provided for by the examination taking place within a reasonable distance of the main line of the Great Western Railway. Such an arrangement would effect an immense saving in travelling expenses, the amount apportioned to each county being scarcely worth consideration. We would suggest that the examination should take place at the apiary of some advanced bee-keeper, where everything necessary for the purpose could be obtained.

Such an arrangement can only be brought about by the joint action of the County Secretaries themselves; and to be successful it must be taken in hand during the autumn of the preceding year. The dates of such examination should be published in the reports usually issued in February, a date being named for candidates to send in their applications to be examined.

If such a method as the above were adopted, no

member of a County Association could complain (as they now with justice sometimes do) that no opportunity is given them of competing for a certificate.

And, before closing, let us listen to 'A Voice from the North.' We have at present a letter before us from an advanced bee-keeper in Scotland, which says:—'Is it not a pity that we have no facilities of securing certificates? Could you suggest any method of securing the honour to those capable? It would give more confidence among strangers when being educated by those they are sure know what they are doing.'

Perhaps while our apiarian legislators are making fresh arrangements for English candidates, they will not forget the cry of their brethren 'over the border.'

HONEY COMPANY.

The first Report and Balance-sheet of this Company, for the year 1885, have been issued to the shareholders. The Balance-sheet represents the trading of the Society for a period of five months only; the expenses include the charge of forming the Company and providing the necessary plant. The expenses of forming the Company, trading charges, salary of secretary, and advertising, amount to 610*l.* 18*s.* 8*d.* On the actual trading a clear profit of 102*l.* 12*s.* 4*d.* has been made, leaving a debit balance of 508*l.* 6*s.* 4*d.* to be carried forward. This does not appear unsatisfactory, taking into consideration the large expenses necessarily attendant on the formation of all societies and the short period that this Company has been trading. We are close on the conclusion of another trading year, and we may soon expect another balance-sheet bringing the accounts up to the 31st of December of the present year; which will enable us to have a clearer and more complete idea of the prospects of the Company.

The General Meeting will be held in Jermyn Street on Thursday, the 21st inst., at 4 o'clock, when full details of the working of the Company will be laid before the meeting.

REV. F. C. JENYNS' BOOK ON BEES.

We are pleased to receive a copy of this work in its new form. It is well got up, and we consider it is a very cheap book at 1*s.* 6*d.* We trust that it will find its way into schools, and so help 'the promotion of bee-keeping among the young.' The book has received the approval of several Inspectors of Schools. We have many schoolmasters among our subscribers, and we hope that they will do their utmost to introduce this most interesting and instructive work into their respective schools.

REMINISCENCE.

'Mel sapit omnia.'

We have had the 'Banquet,' good and cheap it was, too; Spiers and Pond did the thing creditably, and bee-keepers showed up in good numbers. You, sir, said bee-keepers are a clannish set, and Mr. McKnight's solution of the cause of it is the correct one. The 'business end' is not an unmixed evil after all. May it never cease to weed out all the ill-natured from the fraternity!

How much we are like bees, always ready to appropriate anything belonging to our neighbours, be it sweets or inventions, swift to defend what is our own; but after stinging and rolling one another over, ready to unite for the common weal, and when fully gorged with pleasure know how to set up a humming as melodious as any colony of *Apis*. But I am moralising.

The Quarterly Meeting of County Representatives was an index of what the day was to be; every one from the country seemed to think he had a right to be there. I was glad to see this, as although we met strictly for business yet it is nice to see all felt at liberty to get amongst their fellows as much as they could. May our deliberations be for the mutual benefit of both examiners and candidates for the third-class parchment!

I must say my surprise almost equalled my pleasure at seeing so many sit down to the luncheon, especially the ladies; and I understand many more took tickets, but were evidently prevented from coming.

The Chairman was a very appropriate one, well and extensively known, and looked up to as an authority. Our Colonial guests were more at home at bee-keeping than ordinary after-dinner speech making. I was heartily glad Dr. May gave us such a rebuke for not singing the National Anthem. I kept my feet to the last hoping some one would start, and inwardly wishing I had 'a thousand tongues' and all well tuned.

The speakers on the English side were characteristic of British bee-keeping—four of the six were clergymen—they were well chosen too. Who so fit to speak for 'The Prince and Princess of Wales and the rest of the Royal Family' as the Hon. and Rev. H. Bligh, a scion of our 'Old Nobility'; and no better man surely could be found to speak for 'British bee-keeping' than Dr. Bartrum? The doctor spoke well, and his allusions were most happy; a thrill ran through me as he strung those few sentences together to the memory of Mr. Peel; his tribute to Mr. C. N. Abbott was merited and just (by the way where was the veteran? we all looked for him); and when he came to Mr. Cheshire, he brought down the house, full as it was.

The demeanour of our guests was charming. They know their own strength as Colonists, and, without bragging about it, were wise enough not to underrate it. 'Look,' said they, 'at what we have done; see how we have attacked nature in all her primeval strength and conquered her, and have come here to show you the spoil!' They are proud, too, of their institutions. 'Our free education, with all the good qualities of the Prussian and the Irish national systems combined, and all the bad eliminated.'

Mr. McKnight tells me he is an Irishman born, with upwards of thirty years' residence in Ontario. He certainly showed something of his native wit and eloquence when he spoke of the effects of bee-stings, the flavour of honey, the Scotchman's love for his native whisky, and the pains he took to humour his palate, closing up with 'Britain, I love thee, but I love Canada more!'

Mr. Jones rattled away in fine style about his 'Heddon' hive. I was not aware until next day, when I saw the *Journal*, that Mr. Abbott had let out the truth about it, but it was manifest to all that it is no other than our old, discarded friend the 'Carr Stewarton,' with a fresh lining. Of course British bee-keepers will go mad about it, and the dealers will reap a rich harvest, and we shall find it no better than what is now in general use. Section crates we can improve; there were some with

improvements of the right kind at our late show; but of sections and crates more anon. I suppose Mr. Jones intended to make some things he said pass muster off-hand by the aid of his Yankee wit, but cross-questioning only elicited the fact that in ways of management he had not much to teach us.

Mr. Ellis did not find us ready to go into rhapsodies about *Apis dorsata*; no one believes in it; and, as Mr. Cowan said, 'as a domestic bee it is useless.' I was pleased to see friend Raitt again, and to hear the sharply expressed 'No! no!!' when it was said Scotland was almost a colony to England. Is he one that thinks we do not legislate right for her, and wants Home Rule? He did a very canny thing by giving a taste of his heather honey to our guests at the luncheon, and he said one too when he told our 'cousins' to bring 'four hundred tons of honey and teach every household in the kingdom the taste of it, and *we* will supply them,' adding, as he held aloft a bottle of his own native heather honey, 'You can't match that for flavour in the world.'

The colonists will have a good report to take back of the welcome they received at our hands, and we shall ever retain in our memory their courtesy to us in freely showing all they had to show. The pen fails to express the effect the day's proceedings had on one's 'bee' spirits. It was no small degree of personal comfort to preserve one's *incog.*, as the few that were in the 'know' did not forget to plague and chaff him whom they had discovered as—AMATEUR EXPERT.

USEFUL HINTS.

At last the fine weather appears to have departed, storms of rain, and gales, having taken its place, although during the last fortnight sunshine and a summer temperature have prevailed, rendering the autumn, and let us hope the winter, a short one. Bees have luxuriated in pollen-gathering, literally rolling in the golden dust of the mustard and rape fields, and, in some cases, storing honey therefrom, as also the greenish, glutinous nectar from the ivy bloom, and the still darker compound from buckwheat; indeed a finer autumn for the bees is not within our recollection.

UNITING driven bees to colonies in frame-hives may be done most successfully by shaking, or brushing the bees from the frames, uniting them with the driven bees, and allowing all to run back to the hive together. One queen should be removed, but there is no necessity for scented syrup, smoke, or carbolic solution.

The driven bees should be thrown down first, and when they have commenced to run in freely, shake out the rightful possessors upon them. If this plan be thought too troublesome—in reality there is very little trouble attending it—another plan may be adopted, viz.:—Place the driven, or condemned bees, on three or four frames of comb containing some honey, in a nucleus, or other hive, and allow them to stand for a couple of days close beside the weak colony to which they are to be united. In the evening cage the queen intended to be kept, and remove the other; then place the combs and bees from the two hives, alternately, into one. Cover up and blow a little smoke in at the entrance. Leave the bees undisturbed for forty-eight hours and then liberate the caged queen, when the union will be complete, and almost invariably successful, without loss of bees.

A MANIPULATING TENT for setting over a hive has lately been described in our columns. Mr. Root, the American purveyor, has used one in his apiary for years, and gives an illustration of it in his A. B. C. book. In his catalogue he thus describes it:—'This tent is for the purpose of enabling us to go on with such work as introducing queens, transferring &c., when robbers get so troublesome that we could not go on with work otherwise. After the middle of July we are obliged to use them almost constantly in our apiaries, and we could not possibly get along without them. They are made so as to fold up, to put away, or for transportation, and weigh only 6 lbs. all complete. The price is 1.50 dollar (about 6*s.* 3*d.*). You can have one covered with the cheap wire cloth we advertise, if you choose, but it is more expensive, and much heavier to carry than that made of mosquito bar. The dimensions we prefer are 5 feet long, 5 feet wide, and 5 feet high. See illustration in A. B. C. book.'

We can thoroughly endorse the above, and have found a roughly-made, home-produced one to save much labour, especially in queen-introduction and other manipulations, since it obviates the necessity of moving hives into a house, or bee-room, and allows a better light, at such times as bees are disposed to rob. We prefer 6 feet for the height. Most of the catalogues of our English dealers have been sent to us, but in these we have not noticed any description of a similar article. At this we are rather surprised, for, although we by no means advocate the multiplication of appliances, yet there is no doubt that a small portable tent of this kind would be found most useful and would command a considerable sale amongst those who can afford to run into little extravagancies in pursuit of a hobby.

WINTERING as a rule should have been already commenced, but where neglected hitherto, no time should now be lost in making all snug and secure against the hard time coming. Mr. Jones, in his description of the Heddon hive, advocates a bee space above the frames. This is entirely contrary to our English notions. Formerly, in the Woodbury and other discarded frame-hives, an inch space was allowed between the crown-board—then in general use—and the frames. This space was *invariably* filled with comb during the summer, and in wrenching off the crown-board our readers can imagine the disturbance caused to the bees. Fancy treating a colony of Cyprians or Syrians thus! When this superfluous comb, with its accompanying propolis, was cleared away, and the space restored, colonies thus domiciled were always found, in a cold winter, to suffer—and often to perish—from dysentery. Indeed such a system is directly contrary to nature, since the bee in its natural state never leaves empty space above its combs when it can be avoided, a circulation of cold air around and above the cluster being utterly contrary to the bee's ideas of winter warmth and comfort.

Mr. Jones's idea that bees do not suffer from *cold* is diametrically opposed to ours. We think that exposure to severe cold always proves fatal. If not why do so many American apiarists advocate cellar and clamp wintering, double-walled chaff-hives, &c.? Dr. G. L. Tinker, a great authority upon the subject of wintering bees, says:—

'With the knowledge gained on this subject within the last five years there should be no difficulty in wintering bees. It is true there is still difference of opinion on minor points, but the principal requirements, on which success depends, are now generally agreed upon. The first of these is *protection*, which involves the question of *temperature*. The writer—Dr. Tinker—is known to most bee-keepers as the champion of the doctrine that *Cold is the primary cause of most of our winter losses*, as against that most fallacious of all the theories that have been set forth of first cause, viz., the pollen theory. But I am pleased to-day to record that my position on this question has been almost unanimously conceded. *Protection from cold is now regarded as one of the greatest safeguards against bee-diarrhœa*, and not the removal of bee-bread from the combs.'

The same authority goes on to the question of food, and asserts—

'I have maintained, and still hold, that good *natural stores* are first in value and reliability. Sugar syrup has been tried with success in many instances, but the fact remains that few bees, comparatively, have been wintered upon sugar stores and in these few cases, when put to the

test of severe cold, there have been many heavy losses. Hence I can but think that bees winter best on the food that nature has provided for them.'

Sound common sense, we think, this, and therefore we say winter in strongly made, thick, or double-walled hives; let your quilts rest upon the tops of the frames, allowing no space above the combs, but providing winter-passages through every one, and give sealed combs of good early gathered honey, confining the bees to the combs they can cover, with free ventilation at the entrance, and populous colonies wintered thus will come through safely, and reward the careful bee-master with early progeny at spring.

Foul Brood.—The latest discovery under this head is that of Mr. G. H. Hoyle, who says,—'I *was* a firm believer in the germ theory, but since having a great deal of experience with the disease, and having read everything on the subject in the bee-papers, I am firmly convinced that bacteria never attack the larvæ of the honey-bee, except when the larvæ are weakened, or ill, from some other cause.' He believes the disease to be caused by deleterious honey or honey-dew, and lays down the following four propositions:—

(1.) That the disease is not contagious in the manner generally supposed.

(2.) That it cannot be cured by drugs or starvation.

(3.) That it does not appear (of any moment) in a good season.

(4.) That most can be cured by extracting and boiling the honey, and feeding it back; and that any case can be cured by feeding with good honey or sugar syrup, except in a few rare cases, where the fault lies with a bad or puny queen.

Mr. Hoyle ends by saying that, 'If everything connected with the diseased apiary were burned, and a new beginning made, the bees would be just as liable to the disease another year as if the old combs and hives were kept in use.'

These views are certainly new, but if true they are cheering, since if the disease is not contagious, with proper treatment careful bee-keepers run but little risk.

Things-in-General.—The star of apiculture is certainly in the ascendant when our brethren of the craft assemble from the 'ends of the earth,' bringing hither the produce of their hives, for which to find a remunerative market, and to show the mother country 'How to do it.'

The large and important meeting held at South Kensington on the 6th inst. to welcome our Colonial *confrères* will not easily pass from the memory of those present. It was pleasant, too, to meet the well-known apiarists of our own land, to hear of and to report progress, to obtain hints and wrinkles on the thousand and one various points involved in the unlimited art of apiculture. For our own part, the only regret we experienced was that the time was too short. After committees and county meetings, a *récherché* luncheon, with much 'speechifying,' a visit to the honey-market, and a conversazione, with more 'speechifying,' explanation of hives, and other appliances, our brain became almost too confused to digest the whole, and earnestly did we wish that the programme had extended over a couple of days, which would have afforded ample scope for the fraternisation, intercourse, and comparing of notes, which all seemed to desire. Truly, the present year will rank in our bee-keeping records as an *annus mirabilis*. May its memories and associations never fade from our minds, and may its influence upon British and Colonial apiculture be so far-reaching and productive of good that our art may become firmly and widely established as an acknowledged and extensive industry. Then may we exclaim with the Sweet Singer of old, 'Behold how good and joyful a thing it is brethren to dwell together in unity.'

Half-pound Sections are likely to become the rage in English apiaries if the advice of our Canadian visitors is taken, and if the article in our last issue, strongly advocating their use, proves effective. Before, however, we discard our present 1-lb. and 2-lb. sections, cases, racks, or crates, let us not forget the old advice *Festina lente*. First, *will* ½-lb. sections be more saleable than 1-lb.? They have not proved so in America, where a fair trial has been made, and have been almost entirely abandoned. Secondly, will not a strong colony of bees fill twenty-one 1-lb. sections as quickly as twenty-one ½-lbs.? In a copious honey flow we believe they will. Thirdly, can the ½-lb. sections be obtained well and evenly finished, with perfectly flat surfaces, and free from bulging, without the use of separators? We think not; and if so it follows that they will be useless for exhibition even if classes at our shows were assigned to them. So many revolutions are taking place in appliances, and the expenses entailed thereby are so serious, while the price of honey is greatly depreciated, that it behoves us to consider twice before rushing into a novelty which has not been fully proved. A simple plan of dividing the 1-lb. sections into four equal parts for sale at fairs to the juvenile population has been adopted by some. Two diagonal cuts are made through the opposite angles of the section, and you have the four sides of the section, with ¼-lb. of delicious honey-comb attached in triangular shape, to each side. To youngsters, or the 'uneducated,' the 'bleeding' is of little consequence, and a most agreeable and wholesome sweetmeat is provided at the small cost of twopence, and imperfect and partially-sealed sections may be thus disposed of at the remunerative price of 8*d.* per lb. We see no reason why 2-lb. sections should not be dealt with in the same way, and we hope one day to see these triangular pieces of honey-comb introduced under bell-glasses at our railway refreshment stalls and other places of public resort. The expert bee-keeper will know well how to present them at such places free from all 'bleeding.'

IRISH BEE-KEEPERS' ASSOCIATION.

A meeting of the Committee was summoned on Tuesday, September 21st, when Messrs. Chenevix, Sproule, and the Hon. Secretary attended. A quorum not being formed, no meeting was held. A meeting was again summoned on Tuesday, October 5th, when the Rev. P. Kavanagh, H. Chenevix, Esq., and the Hon. Secretary attended. No meeting was held.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

HIVES IN USE IN CANADA.

[642.] From a paragraph in your issue of the 14th inst. I see that 'Novice' desires to know what kind of hive is used by the contributors who sent the forty tons of honey to the Colonial Exhibition; and requests Mr. Corniel and myself to explain the style of hive used by him and me respectively. I am unable to give the precise kind of hive in use by the various contributors. The Heddon hive has not yet come into general use with us, but the moveable frames are universally employed,

Most of those frames are modifications of the Langstroth standard. The hive I use is a two-storey structure, each compartment being exactly alike in size and form, and are interchangeable. In the lower storey or brood-chamber I use ten frames; and when running for extracted honey I use eight frames in the upper storey, and extract almost entirely from the upper storey, rarely disturbing the brood-chamber. My frames are fifteen inches long and ten inches deep. I can if I choose employ three, four, or more of these storeys on top of each other. Indeed, on one occasion last summer I went into my yard and found six of those storeys piled on to each other, and all full of bees. On inquiring from my assistant the cause, he explained by saying that the previous afternoon six swarms came off at the same time, and all clustered together; that he took down the cluster, emptied them on a sheet, divided them into three parts with a queen in each, and succeeded in getting them into three hives; but ere long they came out of two of these hives, and all entered the third. As the bees kept pouring into this hive, he kept adding an additional case with the requisite frames, until he got six of them piled on to each other. I went to work and removed the top case with its frames and bees, placed it on a bottom-board, gave it a queen, and removed it to a new stand; did the same with the next, and the next; and so on, till I had this towering hive with its inmates divided into six hives, placed on their respective stands. Not having had time to 'mark their location,' they remained as placed, and the whole thing was done in less than half an hour. I give this as an example of the advantages of this storeyed interchangeable hive. The supers I use for taking comb-honey are exactly half the size of one of the storeys, and constructed on precisely the same principle as the hive itself; so that four of my supers are equal to my two-storey hive, and may be used in taking either comb or extracted honey at will. The difference in the hives in general use in Canada consists mainly in the size of the frames; some use long shallow frames, and others narrower and deeper frames—each style has its peculiar advantages. One hundred pounds of extracted honey or sixty pounds in comb sections is considered a fair season's average yield per hive with us. —R. McKnight.

'THE VOICE FROM THE WEST.' (634.)

[643.] I could not help feeling grieved to see the name of our dear old friend 'Peel,'—the greatest benefactor to the bee-keeping world that ever lived,—so abused and 'taken in vain' (to my mind it is a great sacrilege) as to be appended to a communication in which the words 'enthusiastic humbug' are applied to any person who should urge others to take up bee-keeping. The mantle of our departed friend has certainly not fallen upon the one who assumes to use his name as his *nom de plume*.

I must leave your readers to draw their own conclusions from his statement about the survival of the 'fittest' and his 'mixed feelings.' Your correspondent probably looks forward to being the sole survivor and having all the neighbourhood to himself.

I propose to deal more particularly with his statement about County Associations. 'John Peel' states that the 'Association in his county died because its work was done.' If so, I think it set itself very little to do, and has soon accomplished it. And, further, he states 'its fruit was ripe and it fell.' Now, I venture to think if 'John Peel' will carefully peruse the annual volumes of the reports of the several County Associations, he will find that those counties which have dropped out of the list (including his own) are those which scarcely ever blossomed, much less bore ripe fruit: they died, not because their work was done, but from lack of support and energy on the part of the residents of the respective counties. Only very recently your valuable *Journal* reported the formation of a Village Bee Club by an energetic lady in a county where the Association has ceased to exist,—as 'John Peel' hails from the west, probably this Club was established in his county,—its establishment, I venture to say, was not caused by the abundance of 'ripe fruit,' but owing to the tree, *i.e.*, the County Association, never having blossomed in this particular village.

Your correspondent states that this year they do not find it difficult to dispose of their honey. Now what does this tend to show, but that the work of the British Bee-keepers' Association, the County Associations, and the Honey Companies, is bearing fruit? And as 'John Peel' benefits thereby, I trust that he gives his support to the B. B. K. A., which is doing such a grand work in causing an increased demand for honey throughout the country.—A Member of the B.B.K.A.

MY SECOND YEAR'S EXPERIENCES.

By a London Bee-keeper.

[644.] In the *Journal* of 15th October, 1885, I recounted my first year's experiences as a bee-keeper within 3½ miles of Oxford Street, stating that I had driven and transferred my bees from a skep to a frame-hive at the end of March; that I had removed the brood-combs from a frame-hive, returning the bees on foundation, and had built up a second colony with the brood-combs headed by an Italian queen; that I had successfully introduced two more Italian queens—one in the middle of September to a colony of hybrids—and had obtained from one hive 91 sections and over 10 lbs. of extracted honey. These operations were carried out simply from the directions in books, and without having seen them done, thus obtaining a practical knowledge of bee-keeping from books without other assistance.

At the end of my first season I was left with two hives, No. 1 hybrids on seven frames (strong), headed by an Italian queen introduced in September, and No. 2 Italians on eight frames (very strong).

It was not till the 2nd October that I finished feeding the bees, having fed them too slowly, and having been delayed by being unable to get the bees to clear extracted combs, which I put into the hives instead of behind the division-board (with a way under it). October being cold, a great deal of the syrup remained unsealed through the winter, and turned sour or candied, and this was especially the case in hive 2.

On the 15th of November there was damp on the windows of No. 1, and a little yellow excrement, but a week after all sign of damp was gone, and in putting a bent twig into the entrance to see if there were many dead bees, I pulled out six live ones. On the 13th February the porch of No. 2 was a good deal spotted from dysentery; this was after about five weeks of severe weather, and I noticed the same thing a fortnight later, and again on the 14th March, after a fortnight's frost.

On the 24th December, as an experiment, I moved hive 1 to face the north-east, and hive 2 to face the south-west, and they remained so during the past season, the only effect I have noticed being that the bees from No. 2 came out later in the morning than the others.

On the 20th March I examined the hives and scraped the floor-boards. In each hive there was brood in one comb, and a great deal of sealed and unsealed honey and syrup. In No. 2 the floor-board was covered with dead bees, and some of the unsealed syrup had run down on to the floor-board. I took out two combs from this hive, leaving six covered with bees; and I also took out two combs from hive 1, leaving five combs crowded with bees. I did not replace the winter packing as I should have done. A week later the bees were hard at work on the crocuses, and I uncapped some honey (or syrup) in each hive, and this I continued to do till the 16th May, when the stores were nearly all gone.

On the 3rd April there was a good deal of brood in two combs in hive 1, and a little in three combs in hive 2, and from this hive I removed a comb as it was not full of bees. Eight or nine days later there was sealed brood in three combs in hive 1 and bees in plenty, while in No. 2 there was sealed brood in only two combs and the bees were reduced in number. On the 22nd April I took out another comb from hive 2, reducing it to four combs, with brood in two of them. Hive 2 was then so weak that, according to the authorities, I ought to have united it to hive 1, but I decided not to do so.

On the 17th April I began to spread brood in hive No. 1, and on the 24th April, and also on the 10th and 12th May, I added a comb of brood which I took from No. 2. On the 18th May No. 1 consisted of nine combs with plenty of brood in all of them, and I put on a rack of twenty-one sections with combs partly built out. On the 16th May and a few days following I fed hive 2 with a little thin syrup, as the weather was wet. It had then five combs, with brood in three of them.

On the 8th May very few black bees were left in hive 1, and I did not notice any after that date.

On the 5th June I took away all the combs from hive 1 except two, putting a frame of foundation before and behind same and seven frames in front with ⅛-inch starters, and I replaced the section-rack which the bees had hardly touched, adding a second rack under the first.

In hive 2, which is a long hive, I removed the combs to the back, placing before them eight frames with starters, making sixteen in all, and over the back frames I placed another empty hive in which I inserted the seven brood combs removed from No. 1 (cutting out queen-cells) with an empty comb behind and a comb with pollen in front.

On the 28th June none of the starters were touched in No. 2, but the bees were at work on all of them in No. 1. On the 30th I took out from hive No. 1 two natural combs, which I cut up and put into the sections, and I did this on several occasions during July.

On the 2nd July three sections were partly sealed in No. 1, and on the 10th I took my first sections, eight in number, and nineteen more between the 20th July and 1st August, making twenty-seven in all.

On the 6th July there was very little brood in the lower frames of hive 2, but plenty above. I gave one comb full of brood to a friend, and removed three to the lower hive, replacing them with three combs from below full of unsealed honey. I understand that in doubled hives it was very general this year to have most of the brood above, probably because of there not being much honey coming in.

On the 3rd July I cut out three small queen-cells from No. 2, and took the first extracted honey, viz., 2½ lbs. from one comb. Altogether during July I extracted about 30 lbs. from this hive and took a natural comb of sealed honey, about 4½ lbs., which did admirably for home use.

On the 4th August I left town for a month, and on my return on the 3rd September the drones had been turned out of both hives, and numbers of dead ones lay around the entrances.

In No. 1 hive there was sealed brood in two combs. I extracted the other combs, and put two extracted combs in front, and two behind the brood-combs, making six combs. I removed the section-racks and found that the honey in them was much reduced, and none of them were completed.

In No. 2 there was brood in six combs. I extracted the other combs, and put an extracted comb in front and another behind the brood-combs, making eight combs.

There was no unsealed brood in either hive, and in each I put extracted combs behind the back dummy for the bees to clean out.

On the 8th September I commenced feeding, and gave ten pints of thick syrup to each hive. I have since reduced No. 2 to seven combs crowded with bees, and No. 1 to five combs, and both hives are ready for the winter.

The total produce of hive 2 was 44½ lbs. extracted honey and 11·7 honey-comb from frames, making about 56 lbs. in all; and the produce of hive 2 was 27 sections, 13¾ extracted, and 1·10 comb from frames, making about 42¾ lbs. in all. Total for the two hives, over 98 lbs. In addition to the honey, I obtained ¾ lb. of wax.

It seems to me that Simmins' system answered very well in hive 2. It is a long hive, and I could at any time lift up the quilt over the front frames (with starters) to see how they were getting on, and to remove combs as they were built out. I fancy it had a tendency to drive the queen into the upper hive, but this would have been checked to a great extent if more honey had been coming in. As to hive 1, which was a short hive, I think the system would have done well in a good season, but this year I think I should have done better if I had returned the bees on full sheets of foundation. It was very troublesome to take off the section racks frequently to get at the frames, and I did not do so as often as I believe I ought to have done. The bees consequently built out a good many combs on the starters, principally drone-comb, and reared brood in them. It also seemed to me that in bad weather there was a tendency to leave the sections, which were never quite full of bees, and to join the bees hanging in clusters from the starters below. But I should mention that from the first this hive was never as strong as I could have wished.

With regard to the weather, the spring was very cold and the season backward. During the latter part of May, when the apple-blossom was out, it was very showery. It was also cold and unfavourable from the 10th to the 22nd of June, and the lime-blossom was much damaged by two very wet days in July.—L.

QUEEN INTRODUCTION.

Raynor *v.* Huber.

[645.] As the 'champion' of the 'law' published in the *Journal* for July 15th, viz., 'When bees have no queen, nor means of rearing one, they will always accept a fertile one at the flight-hole, or dropped in from the top, providing they have been in such a state forty-eight hours,' I beg to be allowed to reply to, and join issue with, the Rev. Geo. Raynor's reply to Mr. Bonner-Chambers (see letter, No. 620). To make the matter and position as clear as I can in the shortest space, I will first deal with Mr. Raynor's paper on 'Queen Introduction,' published in the *Journal* on August 12th, where he refers to this law in the following words: 'The only other method of direct introduction which demands notice is that which is said to have been originally discovered by Huber, viz., that "If a colony of bees have no queen, and no means of rearing one, they will invariably accept a fertile queen when presented to them." This rule requires, of course, an absence of brood and eggs, which seems to be the only stipulated condition, no matter how many or how few, how old or how young, the bees may be, or at what season of the year the introduction is made, it is bound to succeed. To an assertion so utterly absurd I can only say *Credat Judæus*' (*sic*).

'If any one wishes to make the experiment, and has no objection to losing his queens and demoralising his bees, let him deprive a colony of its queen and its combs, and place it upon empty combs, and those containing honey only. Give the bees time to discover the loss of their queen, and offer them another at the entrance or the top of the hive, and she will be at once seized and encased, and either maimed and rendered useless, or killed outright. This, and not a kindly reception, is what invariably takes place in my experience.'

In the above it will be noted Mr. Raynor fails to add

that the bees must have had no means of rearing a queen for forty-eight hours—a condition absolutely essential to success. Why he failed to add it, I will leave for him to explain.

Then, in his directions for trying the law, he says, 'Give the bees time to discover the loss of their queen (which is in from four to six hours' time), and offer them another,' when he says she will be destroyed. I know this quite well, I don't think one in a thousand would be accepted; but if we wait *forty-eight* hours, and then offer them another, not one in ten thousand will be refused. Perhaps he will kindly explain why he quoted 'forty-eight hours after' as '*give the bees time to discover the loss of their queen.*'

Then it will also be noticed that he refers to it as 'That which is said to have been originally discovered by Huber.' I would like him to please say who *said* Huber discovered the Law. Certainly I know of no one saying so till he did, and then, like these repetitions of hearsay in the parlour game known as 'Scandal,' it has gone through Tref Eglwys, Mr. Webster, Mr. Bonner-Chambers, &c., back to Mr. Raynor, who at once drops his 'which is said to have been,' and transforms it into 'a statement of Huber,' and so it is to have another run round. Well, allow me to ask him when and where Huber makes such a *statement*.

There is no authority I have studied more than Huber, and none with so much profit, for the simple reason he makes so *few* errors; the fashion seems to be to run him down, and such criticism is nearly always based on misconstruing what he *does say*, or else *quoting* him as saying what he does *not*. Here we have Mr. Raynor taking exception to his statement that he never knew worker bees sting a queen when presented to them, except in one case that was evidently unintentional, and questions its truth by stating a worker-bee stung a queen as he was carrying her in his fingers. (I presume he held her by the wings and let her claw the air with her feet, which is what I should expect, as bees always sting a moving object when enraged, particularly if 'fluffy,' *e.g.*, a bit of hair or fur held in the fingers and moved by the wind, or a frayed coat cuff, &c., for this reason bees *always* sting me on the eye, if I have no veil on, as I cannot possibly keep off blinking.) Why cannot he keep to Huber, who clearly referred to queens on their legs or being balled, and not a prisoner in one's fingers, or being released from an encasement, which was when Huber's queen was killed? See Huber's letter dated 28th August, 1791. Then take Huber's Leaf hive, with all the talent and all the prizes offered at shows, it stands to-day as it did one hundred years ago the best observatory bar-frame hive invented; no hive is so easy to handle in one's study without disturbing the bees or allowing them to fly out in the room and yet preserve their natural condition and be able to make one's self acquainted with every bee, as Huber's hive, and yet what authority recommends it? Ah! Huber was a 'Grand Old Man,' but he is badly understood in these days.

By way of further confirmation of his position Mr. Raynor gives particulars of another experiment on a stock which he says 'had evidently been queenless some time.' If the conditions were as he describes them, I am positive there was either a queen, eggs, or brood of some kind in the hive, or the queen he presented would not have been killed; what *proofs* had he that it *was* queenless? The presence of drones in September being none, for I could produce stocks even in this October with drones in, and I saw lots the middle of last month containing both drones and drone brood as well as a fertile queen, and if the hive contained an *unfertile* queen in an eggless virgin condition she might be easily overlooked.

Well, by way of a counter-blast to it, allow me to relate a case—not an experiment, mind, as I have accepted this Law as one that will exist while there is a bee on the earth. Last July I sent to Mrs. Benton for a Carniolan queen, but not one could she send, though I was most anxious to get one, nor did I receive her till October 8th, though I had received some Cyprians from Cyprus and Munich in the meantime. This Carniolan was brought by Mr. Benton from Carniola on his way home from Cyprus, and he selected her himself, and labelled her 'I-Grade Carniolan, very choice queen,' so I was not *likely* to want to lose her. Well, I had a stock of black bees crowded on 9 frames 14 inches by 10½ inches—not a weak lot, surely—which had had its queen removed nineteen days, and the sealed queen-cells seven days previously. It was afternoon when she arrived, and when I got home at night I was very anxious to get her safely enthroned. The night was cloudy, and the clocks were striking the hour of eleven p.m., as by means of a small lamp I was removing the top quilting down to the first sheet; I took my knife and cut it along the centre of a frame for about an inch, ditto on the next frame, and then at one end I cut between the two slits, this gave me a kind of valve, flap, or door; I then took the mailing cage out of my pocket containing this 'very choice queen,' poked her out with a match, then picked her up by the wings with one hand, pulled up the valve with the other, and dropped her in amongst at least 8 lbs. of bees. I at once replaced the quilts, &c., and left them for ten minutes, when I found the bees making that peculiar subdued hum I never fail to note when queens are introduced under such conditions.

Now, according to Mr. Raynor, this was perfect madness, for had she been balled, how could I have possibly rescued her? That she was accepted I know, because I saw her a few days after, when I cut winter queen passages in their combs and packed up for winter.

Now, in spite of Mr. Raynor, this Law is making headway amongst advanced and intelligent bee-keepers, for in addition to Mr. Bonner-Chambers, we have Mr. W. B. Webster and Mr. J. Rudge, who speak of having tried it several times *always with success* (see pp. 446 and 479.)

Mr. Rudge was at one time quite in love with another system, but he is finding this—no doubt to his surprise—worth trying, and recommending it as such, and I venture to think the more he tries it the more he will like it. Personally, I don't see how I could get on without the Law as a guide. By proceeding under it I have never failed to get bees to accept a fresh queen, even when they seemed determined not to do so; and then how simple and easy to practise in the hands of timid people and novices! How many more have tried it?

I trust Mr. Raynor will not treat my pertinent remarks and questions as offensive; my sole object is the truth of the matter, which I believe he as much desires as myself. The task of pointing out the errors of one whom we all revere is not an agreeable one—one who I always consider reliable and correct in what he says or writes, but, like the 'Heddon' hive, he has not fully understood the principle of this Law, and, perhaps, also has been confounding it with some other; especially do I think this *probable* because no one who has questioned its truth has been able to quote or apply it properly, simple as it is.

The principle of the Law is this: The bees must have fully realised the fact that they are hopelessly queenless, and that the extinction of their generation is inevitable; then when a queen is given them they accept her *joyfully*, which is in accordance with the first Law of Nature, viz., self-preservation.

At this time of the year, when stocks are quite broodless, queens may be exchanged or introduced by it with very little trouble, but all the queens should be dropped in from the top, for unless bees are flying freely, she might get chilled to death before she succeeded in reaching the cluster of bees.

Let all study my letter for July 15th (No. 441), care-

fully, and those who have tried the Law, I trust, will send the result to the Editor; and to prevent readers writing me their thanks, or for my trade catalogues, of which I have none, the last time my name was signed brought me more letters than I could find time to read, let alone answer, so I shall sign my *nom de plume* as usual, with permission to the Editor to give it *privately* to whom he thinks fit.—A Hallamshire Bee-keeper.

THE LYON HIVE.

[646.] The following description was given by Mr. W. Lyon, of Prescot, Lancashire, who wished me to write an account of the hive. Mr. Lyon has had a good deal of experience in managing bees in out-of-the-way places, such as under the floors of cottages, &c.; and having studied the way in which bees behaved in a state of nature, he deduced the theory of his hive, which he has found very successful when properly carried into practice.

The main idea is, that the less the brood-nest is disturbed, either by the bee-keeper, or by those bees which are not employed in raising brood, the more chance there is of a harvest. In an ordinary hive worked for supers or extracted honey, the bees that have gathered the honey have constantly to pass through the brood-nest.

The Lyon hive consists of enough room to take twelve or fourteen frames, of which six to eight according to the number of the bees are devoted to brood-rearing, and the nest is kept snug by three pieces of tin, one of which covers the top of the frames, and the other two are placed one at each side, acting as division-boards, and are cut slightly wider than the width of the hive, but having a piece taken out of the bottom to allow the bees to pass.

These pieces of tin are covered with a piece of American cloth, the enamelled side next to the side which reaches nearly to the floor-board at front and back.

The outer piece of tin is placed half an inch from the entrance, and the hive is filled up with frames behind the inner piece of tin.

The section rack is placed on the top of the enamel cloth, and projects over the brood nest, so that the bees can climb up both sides of the brood nest, and so get into the section rack, which is kept warm with carpet.

The advantages claimed for this mode of keeping bees are, that the bees can fill the sections without disturbing the brood nest, which is kept warm by the pieces of tin; that the tin condenses the moisture so necessary for brood-rearing, and that the manipulator can take off the sections or the bars at the back without disturbing the brood-nest, and that the queen will not lay eggs in these bars or in the sections.

I have not tried the plan, which was novel to me; but as there is nothing new under the sun, probably some of your readers may be able to give their opinions on the subject.—Geo. Walker, *Wimbledon*.

HONEY AS FOOD AND MEDICINE.

[647.] Before the use of sugar became general, honey was the sweetening medium in regular use all over the world; and, so far as health is concerned, it would have been better had it so remained. The cultivation of the sugar-cane, however, drove into the shade the production of honey. Sugar itself in time was destined to be partially supplanted by a commoner substitute—beet sugar; and this again in turn (for brewing, and many commercial food processes, whole fruit-preserving, cheap sweets, and so on) has, to a considerable deree, had to yield to a still cheaper, commoner substance named glucose, an unwholesome sweet compound made out of a score of things, from potatoes to sawdust and rags, by boiling them in a mixture of water and certain acids. Had the science of bee-keeping been in its present stage when the sugar-cane industry began its rapid growth, the use of sugar would have been considerably retarded by the contemporaneous march of its more wholesome competitor, honey, which held the field. In those dark ages bees were suffocated by sulphur fumes in order to obtain a far more impure honey than is in the market at this day, when the lives of the bees are preserved by scientific methods, which also guarantee to us the absolute purity and cleanliness of the honey, besides telling us, indeed, the actual source whence gathered, whether from fruit-blossoms, clover, or heather. Had the rational culture of bees marched along with scientific sugar-making, we should, I repeat, have heard less of cheap and nasty substitutes for the honey of the ancients. The number of bee-hives, instead of being kept about the same by the natural increase by swarming, and the cruel decrease of the sulphur-pit, would have multiplied at a similar compound rate to that of the cost of nails in the proverbial horse-shoes. Honey would have been produced at so low a rate that it would have held its own as the most delicious food, sweetmeat, and saccharine diet either rich or poor could possess. Mead and metheglin, honey wine, honey vinegar, and honest honey drinks, would be now used by all instead of so many that are nasty and unwholesome.

But for cane sugar there would probably not be so many millions of artificial teeth in daily use as there are, the grape sugar of honey being at once fit for assimilation, whereas cane-sugar (one has noticed how the eating of sweets increases thirst!) calls on a laggard saliva to convert it into grape-sugar, and rests in nooks and corners amongst the teeth, fit food and breeding-ground for caries, schizomycetes, sphæromycetes, and what not, which turn it into acid, the said acid acting upon the lime of the teeth and dissolving them. Because cheap cane-sugars have been taken into the stomach in unreasonable quantity, the liver has been unable to transform them, the result being the disordering of both organs. Dyspepsia and biliousness are probably caused more by the use of cane-sugar than most of us think, indeed, an authority (Mr. F. Cheshire) tells us that if cane-sugar be injected into the blood, it is at once excreted, which is not the case with grape-sugar. Let us then remember that it is only grape-sugar which the system can at once use as heat-giving, fattening food, and this it is which honey supplies ready prepared for us by the bee in Nature's laboratory. Honey will carry along with itself into the stomach for digestion more bread (starch, &c.) than butter will, each helping the other; and a pound of honey at 8*d*. or 9*d*. per lb. will consequently go as far as 2 lbs. of butter, costing 3*s*. Here there is decided economy. It can be used for almost every purpose we now use sugar for; and by the principles of modern bee-keeping, it is becoming more plentiful and cheaper year by year. A great objection to its free use in past years was its comparative high price, owing to the restricted supply caused by the annual destruction of bees. This is now removed. Another serious objection was the fact that honey disagreed with many people. The wonder is that it agreed with any one, for a common way of obtaining it (after smothering the bees) was to cut out the combs containing young bees and pollen, besides honey, and squeeze the whole in a cloth, straining the result for use. It will thus be easily seen, without entering into details, how much objectionable matter was thus imported into the honey which would tend to disorder delicate stomachs. All this is now changed. No brood (young bees) is now allowed by the bee-keeper to be hatched in the clean, snow-white sections of white basswood we see in the shop-windows of fruiterers and grocers who sell honey, the whole of which honey and comb may be spread on bread and eaten, the cells being so thin that it takes six cell-walls to equal the thickness of a sheet of ordinary note paper.

As for liquid, or run honey as it is called—this is equally pure, for the large combs when filled with honey are taken (fast as they are in their wooden frames) from the hives, the bees are shaken or brushed off, the caps or cell-lids are sliced off, and the frame put into a clean tin cylinder, in which they are rapidly revolved, so that the clean, clear honey may fly out of the cells by centrifugal force and run down the tin sides of the extractor. The honey is then strained and put into white flint-glass bottles ready for use, not having been touched by hand or implement in any way.

Honey may be used in making lemon-cake, apple-cake, fruit-cake, sponge-cake, tea-cake, ginger snaps, puddings, for preserving fruits whole, jam making, dried fruit, green fruit, honey vinegar, honey liquorice, fruit wines; mead, metheglin, and other alcoholic drinks, and in fact for very many purposes, the recipes for which may be easily obtained in a pamphlet *Honey as Food, &c.*, T. G. Newman.

As a medicine, honey is said to prolong life. An old Roman who lived above one hundred years told the Emperor Augustus that his secret for long life was 'Interus melle, exterus oleo'—internally through honey, externally through oil. Old bee books tell us that if the stomach be almost ruined by dyspepsia the regular use of honey will restore its vigour; it stimulates and brightens the intellect. Abroad it has been used successfully for the cough accompanying inflammation of the lungs, for bleeding of the lungs, instead of cod-liver oil; in the healing of wounds, in all chest affections, in consumption, constipation, weak nerves, asthma, bronchitis, difficult teething in children, whooping-cough, in poultices for boils, abscesses, ulcers, cancers, sciatica, inflamed wounds, bruises, festerings, inflammation of the eyes, and sore throat. What a catalogue! It reads like the advertisement of some notorious patent medicine; but if so Solomon was an early advertiser of it, for he said, 'My son, eat thou honey, for it is good; so shall the knowledge of wisdom be to thy soul.'

Here we have 'Nature's sweet restorer' (to pervert a quotation) culled by her myriads of merry little slaves, who work to the death in gathering nectar from her myriad flowers. The little chemist turns it into honey, and stores it in immaculately clean cells, seals it over along with its own peculiar flower-perfume well preserved (the smell of honey is the compounded smell of flowers), and yields it up to the bee-master, who collects it and places it in the shape of jar honey or section comb honey for use.

Let us hope the people of this country will recognise the presence among them of such a perfect natural product in quantity, and at such a price as will induce them to cultivate a larger use of it, whether as an article of diet, a medicine, of a luxurious, delicious sweetmeat.—R. A. H. Grimshaw. (*Leeds Mercury.*)

DE QUIBUSDAM.

[648.] If not out of date I would say a word or two, first, about the amusing experience detailed in 623; and if not presumptuous I would add to your editorial remarks on the errors of the 'undaunted novice.' I am not sure that he did not smoke his bees too much, and blind and irritate them, instead of frightening them up to uncapped cells. But there may have been none uncapped, they may have been eating stores, and clearing out cell after cell as they went. In that case a little syrup poured in on top would have been most efficacious. If there was a miserable plug in the skep there would have been a difficulty; if a bit of perforated zinc pinned down over a 3-inch hole, none. But if the bees were duly satisfied with honey, the mischief of using the cheese-cloth appears to me to have consisted in this, that the bees found a more or less darkened place to which they rushed for refuge, and on the cloth being removed, those that were about it were irritated with the disturbance, and those near at the disappointment. A cloth over part of a hive is of course what we have often to use with the special object of supplying a shelter for bees we are driving from combs on the other side. But even in the last case will it not be agreed that a good weapon in good hands ought to have beaten the bees? As they, however, beat their resolute and deserving proprietor, I cannot think but that their honey sacs were empty throughout the battle. I know of no operation in which fewer bees are inclined to trouble you than in driving. The veil no doubt was in this case a protection, but dog-skin gloves are of no use whatever. Let 'Suffering Novice' try a double pair of cotton gloves from Abbott (or get them, if he knows the kind, from the nearest shop), and have a good thick gauntlet sewn on to the thin outer pair with elastic at the top. Success is certain to such a novice as this. This is rather a long story, but I read, and hear, and see how what many people want is to have the matter put very, very plainly. Very likely others may have done so, in which case this will go to the basket.

(628.) Mr. 'Graham Forester' 'cannot understand' why he was so inflamed and 'ill and feverish' after being stung by a certain bee. Has it occurred to him that the bee may have resented being interfered with on 'Sunday last?' I think colour (on week days) is a greater help to finding queens than shape is.

Heather Honey.—It would appear from reports of shows that this is in some cases destitute of the true aroma. I am interested because the product is scarce in these parts, and I have met with some that is very rich and fragrant.

Ivy.—This has supplied so much honey during the last ten days that I actually find it put into combs left behind the dummy to be cleared out.—C. R. S., *South Cornwall, Oct.* 11.

[We are obliged by a hint conveyed to us by the writer of the above admonishing us to be less hazy in our 'Notices to Correspondents;'—we will endeavour to profit by the remarks of our censor.—Ed.]

BUMPING *v.* DRIVING.

[649.] In an article a few weeks ago on 'Bumping *v.* Driving,' bee-keepers were recommended to give the former a fair trial, and report their unbiassed opinion of the process. I confess that I was very much prejudiced against this form of transferring bees from the first moment I read about it in the pages of the *B. B. J.*, and could not persuade myself to give it any countenance, thinking it was fraught with much cruelty to the bees, and a bungling sort of procedure altogether, not at all in harmony with the other gentle and delicate treatment with which we are accustomed to deal with our pets.

However, after reading the article in question, I gradually divested myself of my former prejudice, and determined to give 'bumping' (what a pugilistic name!) an impartial trial; and the result is, without going into tedious details, that some seventy condemned stocks have been bumped, and that I have not driven one. The process is so simple, expeditious, and complete, that any one accustomed to drive bees will find that this plan is considerably in advance of the old method. It is far less laborious, does not weary out your patience, satisfies the owner, yourself and the bees also, by the little time it takes to complete the whole operation. The only inconvenience that I know of connected with this plan is when you have to deal with a rotten, dilapidated skep, as the most gentle bump is almost sure to shiver the whole thing, which may bring on your head a shower of abuse. Some people are very particular about their skeps, and do not hesitate to tell you their minds. To avoid their compliments and to retain their confidence I detach the combs all round the skep with a

long honey-knife; then with a dexterous hand and little patience each comb can be got out whole and unbroken, thereby preserving the entirety of the skep and the confidence of the cottager. This confidence (if I may be allowed to digress a little) requires in many instances considerable tact and stratagem to gain. His stronghold of ignorance and superstition has to be entered, not by shot and shell, but by no end of argument, assurance, and demonstrable proof, and this once attained is no mean victory, I assure you.

But to return to bumping. The whole system has been so well described in the article referred to, and in other numbers of our *Journal*, that I need not recapitulate it now; but instead of cutting the sticks between each comb, which is a very troublesome affair, take a pair of pincers and withdraw them from the outside, giving them a twisting motion while so doing. Instead of brushing the bees back into their skeps I use an empty one, brushing as a rule three stocks into one, of course securing the best queen. After a trial or two it is an easy matter to bump eight or ten stocks in an hour.

I should earnestly advise Mr. Clowes (see page 465, Vol. XIV.) to adopt bumping the next time he makes a journey for condemned bees; it will certainly not take six hours to operate on nine stocks.

By the way, could we not find a more euphonious name for this operation? 'Bumping' sounds so extremely vulgar, and certainly should not enter into the nomenclature of apiarian terms.—Hy. Dobbie, *Thickthorn, October* 18.

Echoes from the Hives.

22 *Stricklandgate, Kendal, Oct.* 9.—I wish to inform you that a quantity of honey reaches Kendal Market, and sells at 10*d.*, 1*s.*, and superior honey, 1*s.* 6*d.* and 1*s.* 8*d.* per lb. I have often wished to know if Westmoreland was honoured with a secretary or was in any way connected with the B. B. A. If not, why should not it be, for there are very many apiaries here? [We should be pleased to know that an Association had been established in Westmoreland. Could our correspondent make a commencement?] I have kept bees for many years, and now possess some very strong hives. I practise driving, in this district, with very good success. I frequently meet with apiculturists who still hold the false and cruel doctrine of 'smothering' to avoid stings, and 'winter feeding.' I am afraid I scathe them too hotly for their blind folly, for they seem to avoid me when I again meet them, or they are afraid of their ignorance. My plea is, then, to save the bees, &c. If 'A Suffering though Undaunted Novice' would furnish me with his address, I will send him a charge of my 'medicated fustian,' that he may be reassured and encouraged for the future.—T. R.

South Derbyshire, Oct. 16th.—My report of the season in this district coincides with the general wail throughout the country. The harvest has been an exceptionally poor one. The results in my case are 320 lbs. extracted honey from nine bar-frames, and 120 sections from eight skeps, not counting the unfinished, which exceed the perfect ones in number. I had also four swarms. At this place, for some, to me, inexplicable reason, I never have the slightest trouble in preventing swarming; whether the proximity of the river produces a coolness in the atmosphere, or it is the peculiarity of the race of bees (blacks), I cannot say, but the fact indisputably remains, that from seventeen hives, although many were crowded to overflowing, I had not a single undesired swarm. Having a fine young queen from a driven cast, I introduced her into a hive whose queen was not satisfactory, but found next day, when opening to release, that the cage had slipped and the queen *non fuit inventa*. However, to make sure, I gave them their own queen back, but when cutting winter passages found four or five ripe queen-cells. These I cut out and introduced another young queen, which was favourably accepted. Is it usual for bees to kill their own queen after having been separated for twenty-four hours? [Bees do nothing invariably.—Mrs. Tupper.] It may possibly help anyone who has a difficulty in spotting a queen if I advise them to carefully examine the space generally left between the comb and bottom bar of the frame. The other day I found three queens in less than twenty minutes, and they had all dodged into this convenient hiding-place.—M. J. Astle.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of persona interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements.

Asp.—*Apiary, Aspect of Hives, Finding Queen, &c.*—Your situation is about as good as can be had for an apiary—sloping towards the south, a small streamlet, and rising ground beyond, with plenty of shelter from north and east. The bee-flora also is good. You have your hive in the best position, under a S.W. wall. Until you have gained experience do not increase the number of hives to more than three or four, and learn to manipulate well. Experience in apiculture is not gained in a day, as many know to their cost. You evidently missed the queen in your examination. If you possess an extractor sling out the unsealed honey and return the frames to the hive. If not return them as they were, and cover up for winter as quickly as possible.

A. Turretin.—Mr. Cowan spoke of the American cloth gloves as being now used on the Continent by bee-keepers while manipulating. We do not think that they are on sale at present in England. Mr. Overton, of Lowfield Apiary, Crawley, Sussex, who is the supplier of the hives and extractors invented by Mr. Cowan, would, most probably, be able to procure them for you.

C.—*Moving Hives.*—You may at the present time move the hives the distance mentioned. Do not close the entrance, but place a board, or a bough, against the hives, so that the bees when going out may note the unusual aspect, and so disguise the former location that it may not be recognisable.

M. D'A.—1. *Wax Moth.*—There is no doubt that the grubs described by you as having white bodies and red or brown heads are the larvæ of the wax-moth. The safest guard against these pests is to keep your stocks strong. The fumes of sulphur will destroy the larvæ of the moth. If allowed to breed they will in time ruin the hive. The wax-moth is one of the direst enemies of bees. 2. *Unsealed Food.*—If the unsealed food is not extracted, the moisture that is unevaporated will condense on the combs, and may occasion dysentery, and finally, in most cases, death. The unsealed food may be consumed first, but it is far best, when closing the hive for winter, that no unsealed stores should be left. It would be advisable to remove them and supplement the deficiency with candy. See reply to J. B. S. 3. *Ventilation.*—If the frames are covered with enamel cloth, the open entrance will give the ventilation required.

A. H. Wood.—The retention of drones till this time of the year indicates that the hive is queenless. This should be ascertained by inspecting the hive, and if found to be queenless it should be united to another. See reply to J. B. S. in last number.

R. Watt.—*Heather Honey.*—In order to get the heather honey from the cells, cut them across and chop them into small pieces; put them into a conical bag and hang up before a warm fire, and the honey will exude.

J. B. S.—*Running short of Stores.*—If you find that your hives run short of food, you had better introduce a cake of candy under the quilt over the frames, or put in a frame of candy at the side of the cluster. The bees will safely winter on candy. For recipe for making candy for winter food, see *Cowan*, p. 128.

Will some one say what the advantages are of having two entrances to hives? In making a bar-frame hive to hold sixteen or eighteen frames, will it be well to have second entrance at back of hive or the side? Also, in making a log-hive (from a tree) will a second entrance be of any avail above the main one, as I intend having two rows of frames, one above another, and leaving room for a section-crate above them if required?—Carpenter.

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Editorial, Notices, &c.

CONVERSATIONAL MEETING OF BRITISH AND CANADIAN BEE-KEEPERS.

A conversational meeting of the British Bee-keepers' Association was held on Wednesday, the 20th inst., at six o'clock, at the offices of the Royal Society for the Prevention of Cruelty to Animals, Jermyn Street, to which the representatives of the Ontario (Canada) Bee-keepers' Association were invited.

Among the large audience assembled were the Hon. and Rev. Henry Bligh, and Mrs. Bligh, Mr. Stewart, Mr. Lyon, Mr. Jones (Canada), Mr. S. Corneil (Canada), Mr. McKnight (Canada), the Rev. G. Raynor, Mr. Glennie, Mr. Garratt, Mr. Blow, Mr. Hooker, Mr. W. B. Webster, Mr. Raitt, Mr. Grimshaw, Mr. Henderson, Mr. Sambels, Mr. Cheshire, Mr. Campbell, Captain Bush, R.N., &c.

The Hon. and Rev. Henry Bligh presided, and in opening the proceedings said he was sure all the members present regretted the absence of the Chairman of the Association (Mr. Cowan), and that, on the other hand, they were pleased to have another opportunity of welcoming their Canadian and Scotch friends amongst them. The English bee-keepers looked forward to gaining more experience from these Transatlantic gentlemen, who were so thoroughly conversant with their subject. He hoped the meeting would be conducted in the Canadian style, and be more conversational in its character than usual. He suggested that those desirous of obtaining information on specific points in relation to bee-culture should submit questions to the audience, which could be discussed *seriatim*.

Mr. Lyon asked for information respecting the nature of propolis. Some people believed it was gathered by bees, and brought into the hive in the same way as pollen was. He had found the underside of quilts completely coated with that substance, being brought in on the bees' legs. The question in his mind was, is propolis gathered entirely from outside, or is it partially elaborated inside the hive from wax or some other substance?

Mr. W. B. Webster was of opinion that it was carried on the bees' legs in the same way as pollen was; but it was not so easily distinguishable, being of the same colour as the leg of the bee. He had seen them gathering it from varnish. No doubt the reason why condemned bees gathered such a quantity was because a new quilt was used, which must be covered at once. They gathered more in the autumn than at any other time.

The Rev. G. Raynor had noticed recently during the fine weather that the bees were carrying in propolis rather largely. It was easy to tell the difference between propolis and pollen, propolis being much more glutinous, bright, and shiny; he thought there could be no doubt about the bees carrying propolis in the same way as pollen. What the nature of the substance was he could not say. Several years ago a number of bee-keepers sent out specimens from different parts to Mr. Hehner for analysis, but he had never heard the result of those experiments.

Mr. Garratt pointed out that the propolisation of the quilt and other parts was carried on during the time the bees could fly. At a later period of the year when they were unable to fly it would be found that very little propolisation was carried on, which fact, he thought, went to prove that propolis was gathered by the bees.

Mr. Raitt had often observed bees picking up propolis from old quilts or old hives. Possibly the propolis found in that condition was mixed with wax; and he would like to know if anyone could inform him what effect propolis had upon wax. He had come to the conclusion that the yellowness of wax was very much due to the presence of propolis in it. He had made some experiments in connexion with wax, and after bleaching it (a purifying process to destroy colour) he found a considerable residue at the bottom of the cake of what had always puzzled him; it was a grey flaky substance, which would dissolve in ether or turpentine, and smelt like wax, but nevertheless was not wax. He wondered whether it was propolis oxydised in the process of bleaching.

Mr. Corneil had often seen bees gathering propolis from old hives. In Canada they also gathered a large quantity of it from a tree called the balm of Gilead, which had a gummy, sticky substance round its leaf-buds. More of it was taken about the time of the close of the honey season than at at any other period of the year. With regard to propolis colouring wax he believed that the yellowish tinge of the comb was acquired from the pollen. The granular substance referred to by Mr. Raitt he had supposed to be pollen, but had never tested it under the microscope. No treatment would make wax of it, and it was not propolis. Mr. Jones had a plan of separating propolis from wax.

Mr. Grimshaw said he had often seen his bees gathering propolis, which was a resinous compound, and therefore could not possibly be secreted from the bodies of bees in the hive.

Mr. Lyon said he quite believed that some of the propolis was gathered outside the hive, but he had been in doubt as to whether the amount so obtained was not afterwards supplemented, and increased in bulk, by being mixed with wax, or otherwise manipulated by the bees.

Mr. Cheshire said that in some apiaries in certain situations the bees gathered no propolis at all, and under no circumstances did they propolise their quilts. He knew of two hundred hives in which there was scarcely

a trace of anything like propolis. He thought that answered the question as to whether it was gathered outside the hive or not. In one of these situations there were no trees present, but on the introduction there of some sunflowers, which contain a resinous material, propolisation of the quilt soon followed. The remarks about propolis opened up an interesting subject from a naturalist's point of view, which had reference to the way in which propolis was passed by the bee on to its legs, and afterwards removed therefrom. He had been trying some experiments in regard to this question, by putting a mass of propolis on to his finger, and allowing a bee to alight thereon, while he watched its operations under a hand magnifier, but had not yet found a satisfactory explanation of the processes.

Mr. Jones had frequently noticed the movements of bees after they had secured propolis from the balm of Gilead. He had seen a bee walking on the glass with its legs covered with propolis, when another bee would come up, and with its mandibles seize one end of the sticky substance, and unwind it to the extent of perhaps a very thin thread of two or three inches, which would drop on the glass or comb, when other bees would come up and convey it away.

Mr. Webster had often observed propolis on glass in streaky threads like those described by Mr. Jones.

Upon the invitation of the Chairman, Mr. Jones explained his system of separating propolis from wax. He said that the wax was heated until it thoroughly melted, and was kept in that warm state without being allowed to cool for from twelve to twenty-four hours. It was kept almost as hot as boiling water—say 180 or 190 degrees. This allowed all the sediment or residue to settle to the bottom, leaving the pure wax above.

The Chairman invited Mr. Corneil to explain his honey crate.

Mr. S. Corneil said that the principal advantage claimed for the honey crate he exhibited to them was that it was reversible when the sections were only partially filled: when they were a little more than half filled the crate could be inverted, the bottom part being turned up, by which means the sections would be completed in better style. He knew that Mr. Hooker and Mr. Neighbour had other means of accomplishing the same end, but he found the system in question work very well with him. He used sections $1\frac{5}{8}$ inches thick, their sides being the usual thickness of a natural comb. When separators were applied to each side there was a bee-space between the separator and the finished surface of the comb. That space was found to be about $\frac{13}{64}$ or $\frac{14}{64}$ of an inch. That reduced the thickness of the comb to about $1\frac{1}{8}$ inch. He made the top and bottom bar $1\frac{1}{8}$ inch, and as the sections rested on these slots in the section case he wanted to have them exactly of the same breadth as the bottom and top bar of the section; consequently his slots and the section case were $1\frac{1}{8}$ inch by $\frac{3}{16}$ inch, which made a strong enough bottom for the crate. The crate was designed to hold six rows of sections, four sections on a row, that is twenty-four when filled. It might be arranged with the side boards so as to have less than twenty-four, and indeed only four if required. The side boards were moveable, and could be pressed up as far as desirable. The separators were of tin, but certain kinds of wood would do. It would be seen by the specimens he exhibited of sections that the projections were cut so as just to come up to the top where the two sections met. They were cut away so as to allow a bee-space horizontally as well as vertically. When there were four sections like one continuous comb, a space was cut away of $\frac{3}{16}$ of an inch, which was quite sufficient to allow a loaded worker to pass, $\frac{5}{32}$ of an inch even being enough for that purpose. In addition to those passages, when the section was placed in the comb it would be observed that the bees could pass round the sides of the section, and, if they wished to get into the spaces between two other rows of sections they could. That was accomplished by hanging $\frac{1}{4}$ inch straps by $\frac{1}{2}$ inch wide on each of the end pieces, which allowed the bees a passage round. It was not absolutely necessary to have the straps $\frac{1}{2}$ inch wide, and if he were making the case over again he thought it would be an improvement to have them only $\frac{3}{16}$ or $\frac{1}{4}$ of an inch. As regarded the size of the section, he thought that an oblong frame was handsomer than a square. He remembered well the history of the $4\frac{1}{4}$ by $4\frac{1}{4}$ inch section. It was originated by a supply manufacturer to suit the Langstroth frame. The Langstroth frame was not used all over the world, and there was no occasion to adhere to the size mentioned merely for the purpose of accommodating the supply dealers; and he recommended bee-keepers to use whatever size suited them best. He had departed from the usual size, and his sections when well filled would average a shade over 14 ounces. The surplus case could be accommodated to suit different-sized hives. It was not necessary to have it the exact length of the hive. His frames as made were a $\frac{1}{4}$ inch below the outer surface of the hive. It was better to have the queen-excluder of wood and metal, than of metal only. When they came to tier up surplus cases they used that between the different section cases, and it was put on in the same way on top of the sections. In getting the sections filled in the first case, he put a large piece of foundation within $\frac{3}{4}$ of an inch of the bottom, and close enough to hang free of the sides, and a narrow strip of foundation on the bottom bar of the section. The strip of foundation at the bottom extended up about a quarter of an inch, and the bees worked on both of those and built out the upper one until it met the lower one. It was important to bring the piece of wax right up to the sides, in which case there would be no pop-holes. When those two pieces of foundation were joined then was the time to invert. He recommended $1\frac{1}{2}$ instead of 2-inch sections. He had some sections of $1\frac{3}{4}$ inches, and others of $1\frac{5}{8}$ inches, and upon weighing a specimen of each only a quarter of an ounce difference was discovered. In the smaller sized sections he found that the comb was built up to the wood better, which was a matter of great importance when the combs were despatched long distances. He had only had one damaged comb out of 800 shipped from Canada. Besides it was more natural for the bees to build the $1\frac{1}{2}$ inch sections, and he thought it best to follow Nature as closely as possible.

In answer to Mr. Sambels, who asked how the sections were kept together sideways, Mr. Corneil said that he closed them up to each other, and the ends of the board being pressed against them held them in place. In his own cases he also used spiral springs made of brass wire 2 inches in length which fitted into saw-cuts.

Mr. Stewart demurred to the statement that the natural size of combs was $1\frac{1}{2}$ inch thickness. It might be the natural size for brood-combs, but store-combs were often found to be larger. In the case of a stock of bees in a hollow tree or rock it would be found on examination that the combs varied in thickness, those intended for store often being as much as 2 or even $2\frac{1}{2}$ inches.

Mr. Garratt was of opinion that when the bees were free to build as they chose, $1\frac{1}{2}$ inches or thereabouts was the natural width. When larger combs were seen it would generally be found that the bees were adapting a means to an end; probably they had not sufficient space at command to build two combs, but were obliged to lengthen out one to fill up the cavity.

Mr. Sambels endorsed Mr. Stewart's remarks, having recently examined some skeps in which he found the store-combs drawn out much thicker than $1\frac{1}{2}$ inches.

Mr. Jones said he thought there was a limit to the width in which bees liked to work, and under the most favourable conditions they chose a width of $1\frac{1}{2}$ inch.

Mr. Raitt had recently seen in Scotland combs of 2 inches in thickness.

Mr. Webster had seen store-combs as wide as 3½ inches, but directly the bees wished to use those combs for brood they set to work and cut them down to a narrower size. He thought, however, that it would be better to adopt as a general size the 1⅝-inch sections because they would sell better and cheaper.

Mr. Corneil had seen the thick combs as described, but he quite agreed with Mr. Jones in thinking that the bees preferred to build 1⅝ inch sections when the conditions of the hive were suited to that size.

Mr. Campbell thought it was a common thing for bees to build thick storage combs, which they afterwards cut down when required for brood.

Mr. Blow said it was important to bear in mind that 4¼ × 4¼ × 2 sections was the regulation size for honey shows. Possibly Mr. Corneil did not know that. He thought a great amount of confusion would arise if every bee-keeper adopted his own size as suggested. Receptacles for conveying honey were adapted to the standard size, and these would be rendered useless if there was to be no general understanding as to size. Besides, customers at a distance knew exactly what they were buying, without it being necessary to go into particulars of dimensions; in fact, if variable sizes were recognised it would revolutionise all the present arrangements.

Mr. Cheshire said that the Committee of the B. B. K. A. had encouraged the 4¼ sized sections because it was thought they were the best to use under all circumstances, but if it should be shown that another size was preferable he imagined the B. B. K. A. would tender such advice that those who used other sizes should not be placed at a disadvantage. Of course the standard frame had had something to do with that matter; but there were not wanting signs indicating the wane of its popularity. He thought a much shallower frame would some day be generally used.

Mr. Lyon thought 4¼ × 3¼ × 1⅝ would be a very useful size.

Mr. Jones said it was quite unnecessary for them to change all their appliances to test the matter of the width of sections. Mr. Neighbour had section crates so constructed that sections could be fitted in of any width. He had cut 20,000 sections of from 1 inch up to 2 inches, and had specimens of nine different widths on view at the Exhibition. He and his friends had found by experiments that the 1⅝ and 1⅞ inch were the best widths for use in Canada. They were always better filled and completed than the larger sizes, and in one third less time.

Mr. McKnight said the members of the British Bee-keepers' Association must not go away with the idea that 1⅝ inch sections was the universal size in Canada. He himself used a section somewhat wider. He was, however, very much in favour of the narrow section, because it exposed a greater surface, and was consequently more attractive, and therefore more saleable. Comb-honey in Canada was sold by weight, and thus it was not important to have all sections of one size. They were not all of one mind on that matter in Canada, and if his English friends could pay a visit to the honey house at the exhibition, they would see an evidence of the variety of thoughts and minds that were brought into play in the production of the exhibits. Their packages were made up in all manner of forms to attract the public eye, different kinds of sections being exposed to view. He was much pleased with his visit to England, but had learnt very little of the systems practised by the British Bee-keepers' Association. He had often heard of the term 'driving' bees, but hardly knew what it meant. If it meant that by some manipulation, operation, or other means, a bee-keeper could cause a colony of bees to travel with one accord from one hive to another, he would be glad to know the secret by which that result was obtained, because it would be something new to them in Ontario.

Mr. Raitt said his hives were almost entirely single-sided hives, and he had paid no attention to the so-called standard frame. They had in Scotland, before that frame was adopted, in pretty general use a hive with 9-inch sides, consequently their frames were half an inch deeper than the English ones. He had always gone in for a 15½ inch top bar, and had no difficulty in using single-sided hives. He had found during the last few years that the price of comb-honey was deteriorating so much that it paid him better to sell extracted honey. He could only get an offer of 9*d.* per lb. for sections of clover honey, and had no difficulty in securing purchasers at 8*d.* per lb. for his extracted honey. By extracting the sections he did a stroke of business, because the stocks of combs that remained could afterwards be used for heather honey, by which means a double amount was obtained, no time being lost in building comb. He thought it was unlikely that they in England could be much in advance of their Canadian friends, because nearly all the systems and appliances in vogue in the old country were borrowed from the United States, and he presumed that the Ontario bee-keepers were well acquainted with all the methods in practice across the border.

Mr. Sambels feared that wood separators would buckle under excessive heat. He then gave a description of the mode of driving bees practised in England, and explained some operation of that kind recently conducted by himself in Hertfordshire.

Mr. McKnight thanked the last speaker for his explanation, and said he supposed there were no straw skeps in use in Canada. He had been there thirty years, and had seen only one straw skep, which was exhibited at a show as a curiosity. They had box-hives without any moveable frames in them. He recommended the use of a handful of grass, which was most effective, for the purpose of brushing bees off the combs, in preference to all the brushes or feathers advertised for that purpose.

The Chairman said that the Committee of the British Bee-keepers' Association had no desire to dictate in reference to the size of sections. It was not until the 4¼ sections became of pretty general use that the Committee recommended the adoption of that size.

The Rev. G. Raynor said he thought that the members of the British Bee-keepers' Association were unable to impart much instruction to their Canadian friends, who had conveyed a large amount of useful information to them. The plan adopted in England of the frame-hive of so-called standard size was very nearly the same size as that introduced by Mr. Woodbury thirty years ago. That hive consisted of ten frames, and at that time sections were not invented, but the distance of the frames was arranged by Mr. Woodbury from the distance of combs built in a skep, which he found to be a shade less than 1½ inch from the centre of comb to centre. He then described fully the principle of the hive in general use throughout England, and endorsed Mr. Raitt's remarks regarding the adoption of American methods and appliances in this country. In some instances the American inventions had been improved upon by Englishmen, as in the case of the Stewarton hive, which had brought about the Carr-Stewarton hive, which was a similar construction to Mr. Heddon's. At present he was in favour of the 2-inch width sections, which he thought would be filled as quickly as the narrower ones; but he was disposed to try experiments on a larger scale with the latter.

Mr. Jones hoped the bee-keepers of England would take an opportunity of fully testing the merits of the different-sized sections.

Mr. Raitt and Mr. Cheshire continued the discussion in regard to the width of sections.

Mr. Stewart said that Canadian bee-keepers might rest assured that the question of sections would be fully con-

sidered, and the different sizes submitted to a fair trial. The Committee of the B.B.K.A. were quite open to conviction, and would be willing to consent to any width that a majority of practical men agreed to recommend. Of course, a certain degree of uniformity must be maintained.

Mr. McKnight said that no doubt the question of sections was one of prime importance to the British bee-keeper, for he believed the time was not far distant when his British friends would have to depend solely on their comb honey for support. Probably they would always have the control of the home markets in that article, but it was not so in the case of extracted honey, which would fall in price. The time was fast coming when a large amount of run honey would be imported into England from Canada of a quality and price which would commend it to the people of the mother country.

Mr. Garratt thought England was capable of producing the finest honey in the world, and could always hold its own in both forms of produce.

Mr. Hooker expressed a similar opinion.

Mr. Jones said that he and his friends had brought over upwards of 80,000 lbs. of honey, and he computed that they had been the means of putting it into the mouths of 100,000 people who had never tasted it before. He thought they had done much to popularise honey at the Colonial Exhibition by offering for sale twopenny tins.

Mr. McKnight did not intend for a moment to cast any reflection on the flavour of British honey, which he had never tasted. The industry was developing in Canada to an extraordinary degree.

Mr. Sambels said he would rejoice if the system adopted by their Canadian friends had the effect of introducing honey (whether Canadian or English) generally into the homes of the poor.

Mr. Jones asked if anyone had ever tried brood-combs of less than one and a half inches, which matter was discussed at some length.

Mr. Garratt drew attention to a machine which he in conjunction with Mr. Hooker had designed for uncapping combs, and exhibited an Association standard frame with the comb built out and uncapped by the instrument in question.

The Rev. G. Raynor asked whether in wintering bees it was desirable to leave a space above the frame, which question was debated for a considerable time, Messrs. Jones, Sambels, Lyon, Corneil, and McKnight, narrating their experiences on the subject.

Mr. Cheshire said his answer to the question was 'Yes' and 'No.' If the bees were numerous enough in their cluster to cover the hive top a space might be left, but if there were not enough to do so, there ought to be no space above the frames.

Mr. Stewart asked what was the best test for the ripeness of honey.

Mr. Jones said that honey was fit to be extracted when capped over, but it was not always so thick then as before capping. In Canada they allowed the extracted honey to remain in tanks and evaporate; then it was drawn off from the bottom, the honey at top being the thinnest. All honey ought to be allowed to stand two or three weeks before it was bottled up.

Mr. Corneil said he was not satisfied that honey, under the conditions mentioned by Mr. Jones, was thicker at bottom than at top. He believed in the diffusion of liquids, and thought that if the honey were allowed to remain long enough in the tanks it would become of the same density all through.

Mr. McKnight had found that liquids did not always diffuse. He had seen two inches of pure water on top of a tank of honey, and there was as distinct a line between the honey and the water as there would be between oil and water. He poured off the water and made vinegar of it. There was no doubt that extracted honey should be allowed to remain for a length of time in open vessels before being bottled. He thought temperature affected diffusion.

Mr. Cheshire had observed different densities in a bottle of clover honey which had recently been sent to him. Diffusion would take place in time without doubt, but owing to the viscosity of honey that operation was extremely slow.

Mr. Jones agreed that the remedy for unequal density was to allow the honey to stand a long time before being used.

The Rev. G. Raynor thought that density was affected more or less by the source from which the honey was gathered. Atmospheric conditions must also be taken into consideration.

Mr. Grimshaw had some heather honey as stiff as marmalade.

The Chairman desired to express the thanks of the meeting to the Canadian gentlemen for the valuable information they had kindly imparted that evening to their fellow-workers in England. He eulogised the system they had adopted for popularising honey and increasing the sale of it, and trusted English bee-keepers would profit by the lesson taught them in that respect. He wished their distinguished guests every success and a safe return to their own country.

Mr. Corneil expressed his thanks to the B. B. K. A. for the extreme courtesy, kindness, and friendliness of their reception.

Mr. McKnight responded in a similar spirit, and said that if they had pictured to themselves beforehand the reception awaiting them in London, they certainly could not have conjured up any idea that would adequately represent the treatment they had experienced from the B. B. K. A.

Mr. Jones replied in the same strain, and said he had felt more pleasure in the society of English bee-keepers than he had ever done anywhere; and he assured the members of the B. B. K. A. that the Ontario bee-keepers would be delighted to meet their English friends on Canadian soil.

Mr. McKnight proposed and Mr. Jones seconded a vote of thanks to the Chairman, who briefly responded, and the proceedings closed; after which Mr. Cheshire exhibited several large diagrams, illustrating the structure and anatomy of the bee, which were examined with much interest, especially by the Canadian representatives.

BRITISH BEE-KEEPERS' ASSOCIATION.

A meeting of the Committee was held at 105 Jermyn Street on Wednesday, October 21st. Present, the Hon. and Rev. H. Bligh (in the Chair), the Rev. Dr. Bartrum, Captain Bush, H. Jonas, J. M. Hooker, D. Stewart, W. O'B. Glennie, Treasurer, and the Secretary. The minutes of the last meeting were read and confirmed. A letter was read from the Rev. F. G. Jenyns, accompanied by a copy of his book about bees in a cheap form to be used as a reading-book for Standard V. in Elementary schools. Resolved, 'That the best thanks and congratulations of the Committee be given to Mr. Jenyns on the completion of his work in providing a book on bees and bee-keeping suitable for school use.'

The Exhibitions sub-Committee presented their accounts relating to the Liverpool, Norwich, and South Kensington Exhibitions: the same were considered and passed. The sub-Committee were requested to prepare an amended prize list for the Bee Department of the Royal Agricultural Show, to be held at Newcastle-on-Tyne in 1887.

A vote of thanks was passed to the Exhibition sub-Committee for the successful way in which the Exhibitions had been managed during the year. The next Committee meeting was fixed for Wednesday, November 17.

In Memoriam.

We regret to have to record the death of Dr. A. Butlerow, of St. Petersburg, Professor of Chemistry and Medicine at the University, and the leading bee-keeper in Russia. For a great number of years Dr. Butlerow was known as a contributor to the *Bienenzeitung*, and other Continental bee periodicals. In 1869 he wrote and published a book on bees, their natural history, and rational management, especially in moveable comb hives, in the Russian language. This work has gone through five editions, and as many as 20,000 copies of it have been circulated. It was also translated into Polish. For this work he received from the Imperial Economic Society the gold medal. In his fifth edition, 1883, a copy of which he kindly presented to us, he gives the names and addresses of over seventy bee-keepers in Russia to whom those in difficulties with their bees can apply to for advice and information. In 1872 he was appointed chief of the apicultural department of the above Society, and commenced his work by translating the work of Baron von Berlepsch into Russian, which was published by the Society. He founded a school of apiculture in Twer, and was the first to bring to notice the Caucasian bee. He made a careful study of foul brood, and was the first to recommend phenol in the food given to bees as a remedy. He published his experiments on its use in the *Bienenzeitung*, 1874, p. 176. The proportions to be given in the food recommended by him were one of phenol in 600 of syrup as the limit of what the bees would take without trouble. Dr. Butlerow had at his country estate over one hundred stocks of all the different races of bees. To him are mainly due the great advances made in Russia in bee-keeping, and he was always looked upon, not only in Russia, but also in other countries of the Continent, as a great authority on scientific and practical bee-keeping. By his death bee-keeping in Russia sustains a heavy blow, and the University an able and highly-esteemed professor.

HOW BEES LOVE TO LIVE WITH THE POETS.

At page 252 of Mr. Martin Tupper's interesting book entitled *My Life as an Author*, we read the following:—'Amongst other specialities of ancient Albury House, which has 1561 on a weathercock, and 1701 on a kitchen wing, is the same peculiarity which Tennyson told me at Farringford vexes him in his own less ancient dwelling; and which Pindar of old declared to be the privilege of poets. We are, and have been for generations, a very house-hive of bees; the whole front of two gables has them under its oak floors and panelled walls throughout; and when guests sleep in certain rooms they have to be forewarned that the groans at midnight are not those of perturbed spirits, but the hum and bustle of multitudinous bees. We cannot drive them away, nor destroy them utterly—as often has been attempted; and if we did, the worry would be only worsened, as in that case hornets would come and succeed to the sweet heritage of beedom. When the stuccoed front of our house was demolished, to show the oaken pattern (but it had to be re-roughcast to keep out the weather), there were pailsful of honey carried off by the labourers, of course not without wounds or strife; but in ordinary times it is a strange fact that our bees never sting their hosts; be careful only to remain quiet, and there is no war between man and bee. Two years ago a great comb was built outside an eaveboard, probably because there was no room for more comb inside. It is curious that it should have survived two hard winters. Is not all this apposite, as suited (let Pindar and Tennyson bear witness) to a poet's home?'

CANADA.

Ontario Bee-Keepers' Association.

On Tuesday evening, September 14th, the first session of the Annual Convention of the above Association was convened in the City Hall, Toronto, about fifty bee-keepers being present. In the absence of the President, who was absent in England, representing with others the Association at the Colonial Exhibition, the Rev. W. F. Clarke presided.

It was reported that at the last session of the Ontario Legislature certain amendments were made to the Agricultural and Arts Act, whereby the Ontario Bee-keepers' Association became a body corporate, and hereafter is to be recognised by an annual grant of $500. This places the Association on the same footing as are the Dairymen's and Fruit-growers' Associations, and will form a grand lever for the advancement of the interests of bee-keepers in general. On the understanding that the regular annual meeting for the election of officers and other matters of like nature should be held immediately after the return of the commissioners from England, when a full report from them will be received, it was decided to dispense at this time with the reading of the minutes of the former annual meeting.

On taking the chair, the acting President congratulated the Association upon having reached the status of a recognised Government body, placing the Association on the same footing as the Fruit-growers' and Dairymen's Associations. Besides having received from the Government letters of incorporation and the terms of the annual grant of $500, a special grant of $1000 had also been allowed the Association, which sum was being used by the executive committee in England with the Exhibition at Kensington. The vast importance, which the Associations before mentioned had received through the Government recognition, will now be accorded the Ontario bee-keepers; this he considered should be a jubilee occasion amongst bee-keepers.

The present membership of the Association is eighty.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the months of August and September amounted as follows:—

August	1255*l.*
September	2812*l.*

[From a return furnished by the Statistical Office, Her Majesty's Customs, to E. H. Bellairs, Wingfield, Christchurch.]

QUEEN INTRODUCTION.

RAYNOR *v.* HUBER.

[650.]—*Re* Hallamshire Bee-keeper,—a rather long *nom de plume*, which, in consideration of your space, allow me, Mr. Editor, to curtail to its initials 'H. B.' *Imprimis*. In the quotation which 'H. B.' does me the honour to make from my paper on 'Queen Introduction,' he objects to the use of the expression, 'That which is said to have been originally discovered by Huber,' and asks, 'Who said Huber discovered the "Law"?' To which I reply that I never stated that Huber is said to have discovered '*the Law*.' I can only suppose that 'H. B.' imagined I referred to '*the Law*' promulgated by himself, but of which, at the moment of penning that paragraph, I was quite oblivious; this will also answer his question why I 'quoted *forty-eight hours after*' as '*give the bees time to discover the loss of their queen*.'

Huber states from twenty to twenty-four hours as the time bees require to discover, and forget, the loss of their queen, when they will respectfully receive another. 'H. B.' says they discover their loss in 'from four to six hours time.' Dunbar quotes eighteen hours. Major Munn says that in one of his experiments the bees were unaware of their situation for five days; and Golding remarks that the period may be shortened by exciting an agitation in the family—by gently fumigating them, for instance—which causes such a degree of alarm as to prompt them to an exercise of the most prominent of their instincts, that of assuring themselves of the presence and safety of their queen. Whilst these eminent authorities differ so materially, how can 'H. B.' ask me why I did not state forty-eight hours instead of saying 'Give the bees time to discover their loss?' Surely I cannot fairly be blamed for diffidence in giving an opinion on such a moot point, however dogmatically 'H. B.' may pronounce his.

'H. B.' states, 'There is no authority I have studied more than Huber.' I, also, have studied him, but, evidently, in 'H. B.'s' estimation, with far less advantage than himself. Nevertheless, I must continue to maintain that the assertion—'If a colony of bees have no queen, and no means of raising one, they will invariably accept a fertile queen, when presented to them'—may be justly deduced from Huber's experiments and statements, and I did not intend to imply that these were the *ipsissima verba* of Huber, they were not, therefore, placed in inverted commas for that purpose, but merely to state a *formula*.

I went on to say that 'this rule requires an absence of brood and eggs,' &c., as simply the natural outcome, in case of a colony which has been long queenless, since, in my own experience, such a queenless colony, when supplied with eggs, and while elaborating queen-cells and rearing queens, refuses to accept a fertile queen.

'H. B.'s' assertion that 'if we allow a colony to remain queenless forty-eight hours, and then offer them another queen not one queen in ten thousand will be refused,' is tantamount to proclaiming that bees act *invariably*, in some cases at least, but were I a judge in a cause 'Tupper *v.* H. B.' I should certainly pronounce judgment in favour of the plaintiff.

Next, as regards the stinging of the queen by workers. Let me assure 'H. B.' that I never carry queens by the tips of the wings. To do so in the case of a large fertile queen, whose ovaries were distended with eggs, and she '*clawing the air*,' I should esteem an act of cruelty to an animal. In the manipulation of queens my plan is to take them, very gently, by the thorax, and I have been so fortunate hitherto as never to injure one by so doing. No, the queen was fairly stung to death while being quietly borne from one hive to another. Not only so, but I have repeatedly witnessed queens stung to death by the bees in the following cases, viz., when swarms unite, especially when an after-swarm joins itself to a prime swarm. This *generally* takes place when the variety is Syrian. Again, in very many instances, when receiving Italian and other queens from abroad, on removing the queens from the little boxes in which they have travelled, to cage them in the alien colony, I have deposited the native queens, removed from the English colonies, in the said little boxes, only to see them immediately stung to death. In a few cases only have they been crushed to death by encasement. Indeed, when the anger of bees is aroused they are apt to use their stings freely upon queens, men, or other animals, without respect of persons, and as if bereft of instinct (I had almost written reason) and regardless of consequences, being, in fact, apparently in a state of acute mania, and 'running a muck.'

Huber's Leaf-hive. Here, again, I fear I must differ from 'H. B.,' in estimating the value of this hive as far greater than that of all the observatory-hives exhibited for prizes at our modern shows. It may be bad taste and perverted judgment on my part, but I infinitely prefer any of our modern hives in which 'each comb is visible on both sides' to Huber's Leaf-hive, which is represented in the appendix to his letters as consisting of twelve close-ended frames, hinged together, and of the forcing asunder the frames of a *facsimile* of which, when firmly glued together by propolis, in my younger days—some five-and-thirty years ago—I have a lively recollection. I think it was on that occasion that my system became so thoroughly impregnated with formic acid that I am virtually sting-proof now. 'Of this hive,' Major Munn remarks, 'we have many modifications which are of a complex structure . . . . and are so far ineligible for general use, as every bee-master, in operating with these irritable and impatient labourers, the bees, must feel all this machinery an obstacle to success. Improvements have been attempted to prevent the bees being crushed, as they invariably crowd up the openings of the leaves, when opened and exposed to the light; but still the thin sides only act as a guillotine knife, instead of the crushing wheels of the car of "Juggernauth;" for the willing victims will always rush to these points of danger: the crushing of bees always irritates the survivors. Nevertheless, this was the *only* hive used by the indefatigable Huber at Geneva, with the assistance of of his servant Burnens.' A slightly different estimate, this, from that of 'H. B.!' I should be sorry to believe, in this case, the truth of the old Latin maxim, '*Ex uno specta omnia*.'

On the experiment, which I related in my answer to Mr. Bonner-Chambers (No. 620), 'H. B.' remarks:—'*If the conditions were as he describes them, I am positive there was either a queen, eggs, or brood in the hive*' (the italics are mine). I will merely remark that I stated the conditions simply as they occurred, and that there were neither *queen, eggs*, nor *brood* in the hive. After this no reiteration would convince 'H. B.,' and therefore I must leave it to my friends, and to public opinion generally, to say whether I am worthy of credit, and whether I am capable of discovering the queen—virgin though she may be—of a hive, and its eggs and brood. That there was no queen present was sufficiently testified, to my mind, by the acceptance by the colony, immediately after the *contretemps*, of a Cyprian queen, received from Mr. Benton, and introduced by cage, and which two days ago was still at the head of the colony in fine condition—a yellow queen surrounded by black subjects—as to whose presence I can only trust that my eyes did not deceive me.

To 'H. B.'s' 'counter-blast,' I simply reply that it is only another instance of the *variability* of the action of bees. I do not for one moment doubt either his *word* or his *ability*. All that I say is, I have always found a colony, which had been long queenless, the least inclined

of all to receive a queen, and that I had never, after many trials, succeeded in *directly* introducing a queen to such a colony. Such is still my experience, but I trust that I am not too old to learn, hence, if spared another year, I shall be only too happy in again experimenting under 'H. B.'s' '*Law*,' and, if successful, will not fail to state the fact in your columns. Let me assure 'H. B.' that I do not take his remarks as offensive, feeling well convinced that they were not so intended. The experience of many years, and the controversies which have raged, in all countries, on this one subject of queen-introduction, naturally lead to the inference that it is one of the most difficult—if not *the most* difficult—of operations in apiculture.

If 'H. B.' has solved the problem, as he claims to have done, none will more sincerely congratulate him than I. At present I have certainly not succeeded.—GEORGE RAYNOR, *Hazeleigh Rectory, October 25th.*

QUEEN-INTRODUCTION.

[651.] Seeing this important matter is again on the *tapis*, I relate my experience on the matter of 'Direct Introduction.' I have introduced one hundred queens this season, with only one loss, in May, and this I attribute to this special queen getting chilled. The plan I have followed throughout is that now known as the 'Simmins' Direct Introduction,' which I act on as follows: On receipt of my Italian or other valuable queens, I find and remove the black queens to be superseded, between three to six p.m. Between nine and ten p.m., I take the Italian queens (four at once, in separate cages, in a box provided with a flat bottle filled with warm water, to keep queens from getting chilled). Each queen must be quite alone, and be without food for half-an-hour. On reaching the queenless hives, I just drop the fresh queens out of the pipe-cover cages down the feeding-hole in the quilt, giving a puff of smoke first. If the hive has been queenless some time, the queen may be introduced in the same way, at night. I use a lantern giving a strong light during manipulations.

Some two years ago I tried introducing single queens on a frame of comb, as then recommended by Mr. Simmins, but with many failures, perhaps because I followed this plan in full daylight. So when I received his new work this spring I felt very sceptical about his directions, but finding six queens safely received by nuclei on this new plan, I soon introduced direct to full stocks, and I think my operations are a grand vindication of the efficacy of his plan of introduction, which, if *faithfully* followed is as near infallible as anything can be.

In No. 226, a 'Hallamshire Bee-keeper' safely introduces a queen direct from her escort, and food in cage. As hive had been queenless some days, this might not matter; but if the old queen had only been a few hours out, it would have been better to keep the new one half-an-hour without food.

In concluding, I think the heart-felt thanks of every apiarist who has to introduce queens is due to Mr. Simmins, who, if not the discoverer of the plan, is at any rate the first who advocated it here.—G. STOTHARD, *Welwyn, Herts.*

A SUCCESSFUL INTRODUCTION, AND A QUESTION.

[652.] I should like to play my little instrument in the grand concert of queen introduction that has been lately in performance in the *Bee Journal* and *note* another success. On August 18th I found that one of my stocks (black) was queenless, so sent off the following day to Mr. Simmins for a Ligurian queen, and she duly arrived on the 22nd by post, but being Sunday I was unable to introduce her to her new subjects at dusk as my duties called me to church, so she was kept in her little box on the kitchen mantelshelf till Monday, and that evening I followed Mr. Simmins' instructions and let her run into the hive by lifting one corner of the quilt. I examined on Thursday and found she was all right and had laid a large number of eggs in the two combs I lifted out in finding her. This was my first attempt at queen introduction, and decidedly a success, and the method is so simple, the trouble so little, and Mr. Simmins' guarantee so comforting, that at present I am determined to try no other way. So much for the queen, now for the query. Mr. Cowan says in his book in the table of 'Metamorphoses of Bees,' page 9:—

'3. The bee leaves the cell as a perfect insect on the 22nd.

'4. The bee leaves the hive to fly on the 14th.'

Now I understand from this that the worker bees are supposed not to leave the hive till they are fourteen days old, and yet last Thursday, the 23rd, when they had only been out of the cells nine days at the most, there were hundreds of them flying about, and going in and out of the hive. Now my question is, Has Mr. Cowan made a mistake, or have I misunderstood his book? I am quite certain that my dates are correct, for I keep a diary of all that goes on in my apiary. I may add that my new queen is the only Ligurian in the district.—LYNTON.

[The paragraph preceding the table states that the *usual* periods are given. The 14th day is the usual period for flying, and the leading bee-keepers agree in this, although we have ourselves noticed exceptions like the one alluded to by our correspondent.—ED.]

'THE NIMBLE SIXPENCE.'

[653.] We all desire it surely; of its advantages I need not write a word. How to obtain it is the bee-keeper's problem. 'A small section,' says our Editor. 'Useful Hints' asks, 'Will half-pound sections be more saleable than one pound?' adding, 'They have not proved so in America.' Now I am rather inclined to think they may with us, but can they be produced profitably? I answer, No, and give a few reasons. However startling it may seem to many, yet there are several good British honey-getters who affirm that in a good honey flow a strong colony will fill a twenty-one 2-lb. super crate nearly as quickly as a twenty-one 1-lb. crate; and that is my experience exactly. The reason, I believe, is to be found in the fact that a larger cluster of bees can hang in each 2-lb. section for the purpose of wax secretion than there can in the 1-lb. sections, consequently they build the larger piece of comb as fast as they do the smaller; the difficulty in a honey glut always being in getting the comb built sufficiently fast, not in getting it filled after it is built.

The next reason I have for saying they will not pay for producing is one of cost. The outlay in sections to produce any given weight will be exactly doubled, as the difference in the cost of manufacturing 1000 one-pound sections and the same number of half pound ditto will be practically *nil*. I am not afraid of a new idea. If our dealers will supply half-pound sections I will try a few next season, but in the question of half-pound sections I intend to 'go slow.'

The 'nimble sixpence' has another side to it; it is cheaper production. 'A narrow section,' say Mr. Jones and Mr. Corneil, because it is 'imitating nature.' The same argument holds as good for a $1\frac{3}{4}$ in. comb as it does for a $1\frac{1}{8}$ in. Bees always build thick *store* combs in a state of 'nature,' unless there is some obstruction to prevent them. Our Canadian friends admit the practice of thin sections is new with them, but say it answers well. I believe there is more 'imitation of nature' in the oblong shape of Mr. Corneil's section than there is in 'thin' *versus* 'thick' combs. Like our two-pound sections, it gives the bees more room for clustering for wax secretion; consequently they build them full of comb

faster. The 'inseps' [?] all four sides of the sections, instead of only at the top and bottom, I believe to be a very great improvement. I hope the dealers will adopt it. 'Honey on a stick' may do also for the 'nimble sixpence,' but I know nothing so calculated to excite the wrath of an English holiday crowd. In America, with her 'cotton-clad' citizens, which the laundress can always put right, however much they may get bedaubed with 'treacle,' the thing may answer, but 'John Bull' with his 'shoddy!' How the curse of the gods would be invoked upon the innocent heads of 'fanatical' bee-keepers!' What a harvest for the flies and wasps at our flower shows where there happened to be a honey-stall selling 'honey on a stick?' And wouldn't the youthful mobility enjoy the fun? Barnet Fair would be tame to it, and there would soon be an end to that phase of the 'nimble sixpence.'—AMATEUR EXPERT.

'A VOICE FROM THE WEST.'

[654.] Perhaps the greatest novelty brought before the apiarian world this past summer has been the new carbolic-acid fumigator. Although I invariably advise others, who wish to make bee-keeping pay, to avoid an accumulation of appliances, and to eschew all and every new invention until at least the third season, or perhaps the fourth, of its existence, yet I myself never fail to act contrary to my own theory, and to obtain at once 'the latest thing out.' When, therefore, the new fumigator was announced, I immediately communicated with the inventor, and in due time, after a few mishaps, received the new weapon which was to make the 'truculent pests' of our apiaries lie down, figuratively speaking, with our gentle British blacks.

The first feature that struck me on my first examination of the carbolic fumigator was the ingenious contrivance for causing the chamber which holds the sponge to fall into the hive during the process of manipulation. Its only attachment to the bellows was by a slight cylindrical tube thrust into a circular piece of cork fastened to the upper surface of the bellows. In this respect, the new fumigator answered the expectations of the inventor, for while I was gently agitating the bellows over the opened-out frames of a hive of vicious Syrians, over it went, parting from its lower half, and plunging into the very midst of the hive, clearing the bees off the opposite sides of two frames, crushing others, and making a most unpleasant jar. The bees, under the impression that I had opened the hive in order to throw a stone into it, 'went' for me most vigorously, and I suffered somewhat in closing the hive ere beating a retreat.

I now secured the zinc chamber to the bellows with a band, and proceeded to experimentalise in another portion of my apiary; and the conclusion I have come to from the experience of that day and the remainder of the season is, that while the new fumigator is a valuable adjunct to the apiary, yet it is, for a difficult and prolonged operation with fierce bees, *not* equal to the old smoker. At any rate such is my opinion, but founded upon the short experience of one season only. For any light operation it does very well, but for heavy work I prefer my old smoker. Again, it appears to me that the carbolic acid in the new fumigator, while startling the bees and driving them below, yet does not cause them to gorge so readily as does the old method. These impressions of mine are perhaps incorrect, and contrary to the experience of others. At any rate it is a subject upon which the opinions of your readers may well be given during the winter months. I am rather surprised that so little has been said of the new fumigator of late. On the whole I am inclined to think that it will find a place among the indispensables of a well-supplied apiary.

May I mention a circumstance which came under my notice for the first time this season? That the bees slaughter the drones is of course a well-known fact; also that they usually kill robbers, and strangle bees who attempt to enter their hives; but I was not aware, until lately, that they also despatched old and diseased workers of their own hive. Yet such is the case, for I particularly noticed that the small, shiny, hairless bees (marks, I believe, of age and disease) were worried and slain by their younger brethren. This occurred in more than one hive of yellows and hybrids. Has this been noticed by any of your readers, namely, the slaughter of old workers as well as of drones? It is to be feared that, as is so often the case, a more intimate acquaintance with our favourites reveals traits of character not altogether to be commended as worthy of our imitation.

I believe the elephant most dreaded by the hunters is the one which either compulsorily or voluntarily is separated from the herd. Not having any domestic or social ties he wanders disconsolately about seeking whom he may 'smash,' and is altogether a dangerous animal to meet at any time. Well, it seems to me that the collapse of a County Association has the effect of leaving a few herdless apiarians, who, belonging to no association, are amenable to no discipline, and so are regarded somewhat askance by the sleek members of the big herd of the B.B.K.A.

Well, the life of a free-lance has its pleasures as well as its dangers; among the latter being the reproof of 'A Member of the B.B.K.A.,' which 'John Peel' receives with becoming meekness. He would only venture to suggest that the reason why this year we of this neighbourhood have had no difficulty in disposing of our honey is owing to the fact of the yield having been far below the average, and only equal to local demand, and therefore its ready disposal this year is owing to that cause and not to any help afforded by the B.B.K.A., the County Associations, or the Honey Companies.—JOHN PEEL.

'MY EXPERIENCE.'

[655.] The writer who in a recent number signed himself 'A Suffering though Undaunted Novice,' narrated his experience in a way which was both interesting and amusing. Like the writer under notice, I am a novice, being your correspondent's senior in bee-keeping by some three or four weeks. The reason I had never kept bees in my younger days was the fear of getting stung, and I wanted to make a start in the fancy by a friend of mine who, when visiting my garden in July last, assured me that if I could be induced to take as much interest in bees as I did in the cultivation of potatoes, I should become a successful bee-keeper, and he knowingly remarked, 'Look at the profit, old man!' Profits? Profits! says I. It was such a long time since I either saw or heard of profits I had almost forgotten such a thing existed. Profits to be had from bees! then I am going in for them at once. A week later, sir, my garden contained a hive and a swarm of bees, and bee-keeping commenced at the Villas, Wigginton Road. My first lesson I had from my friend, who kindly put my hive in order, instructed me how to proceed with feeding, and finally hived my swarm.

My next venture was to get a copy of Cowan's *Bee-keeper's Guide-book*, and this I read Sundays and Mondays until I knew it thoroughly. To manipulate was the next step I took, and in August, whilst I was at the Warwickshire Agricultural Show, held at Nuneaton, I was privileged, thanks to the kindness of Mr. Summersgill, the Warwickshire expert, to witness a driving competition between two well-known experts, Mr. Baldwin, of Bromley, and the equally enthusiastic bee-keeper, Mr. Sells. With what interest I watched the efforts of—may I term them my friends—I don't think it would be prudent for me to state here; suffice to say I watched, I learnt, and 'quizzed' her majesty, the queen, with a curiosity which no doubt made men present better ac-

quainted with bee-keeping than myself laugh at my seeming ignorance. Since then I have been preaching against the absurdity of smothering bees, and a fortnight ago I was given my first trial at driving. A gentleman in this locality wanted some honey, and the bees I could have for driving.

One afternoon I marched off, with smoker, skep, and driving irons, and having reached the apiary and come to the skep in which the condemned bees resided, I lit up, smoked, inverted the skep, fastened the empty skep on top, and commenced. Tapping was no use, bees would not go, so I resorted to 'bumping.' Three bumps and up went the bees,—saw the queen and caught her, and for the want of a better receptacle, placed her in an empty match-box. The bees having been driven from their old dwelling, I carefully disconnected the skeps, placed the one containing the bees on a tablecloth tied up, lighted up my pipe, and marched for 'Home, sweet home,' a happy and contented bee-enthusiast. Reaching home, I added a couple of frames to my hive, placed on the feeder with some syrup, smoked my bees, and, for the want of something better, procured the wife's cutting-board, which having placed on a level with the entrance to the hive, I turned out my newly driven bees, and judge of my delight as I saw them enter their new dwelling, truly humming a merry tune. That they are doing well may be guessed from the fact that on the following Friday I saw a number of them carrying pollen.

My next effort in driving bees was so recent as Saturday, when I journeyed to a neighbouring town to drive four hives for an agricultural friend. On reaching his apiary I was shown the four hives that were to be driven and the four with which my friend wished the driven bees united. I inspected the first four, and I must candidly admit my heart at first fairly gave way. The first skep to be driven had stood the gales of seven years. It was full of bees, but the top had long since fallen in, having yielded to the weight of a couple of bricks that had fallen on it; the bricks had been allowed to remain where they had fallen, whilst ivy and other creeping plants entwined their leaves around the rotten straw. In inverting the skep it parted asunder in my hands—old age and bad usage had played their cards too well. I was in a mess: what should I do? My friend stood at a respectable distance laughing at me. Hundreds of bees filled the air, buzzing around my head; a score or two were crawling along my bare arms and hands, whilst not a few certainly appeared inclined to crawl underneath my trousers. The thought struck me, 'I will brush the bees from the combs into the empty skep, for driving is out of the question.' With a 'goose's' wing in my hand I set to work, and taking the combs out one by one I brushed the bees off. It was a ticklish job, and I certainly wished I had not undertaken it, but I was rewarded when the last comb was cleared, and I shouted lustily, 'Hurrah, I have done it, and not a sting!'

Uniting was a simple matter; I had the experience of a former occasion to help me. Hive No. 2 was sound; it stood the process of being inverted and the bees were driven in a quarter of an hour, and united immediately afterwards. Hive No. 3 proved another severe trial of patience. Slugs, worms, and other insects, including a fine toad, surrounded it, whilst endless species of fungi had found sufficient nutrition in its external parts to flourish to an enormous extent. The top of the skep had years ago fallen in, whilst the energetic inmates had built several combs outside. To clear away the mess was the work of a few minutes, and with some straw the skep was bound to strengthen it. A piece of cheese-cloth was placed over the top, and with a bucket the skep was with some difficulty inverted. Its sides were so rotten that they refused to hold the irons, and I only succeeded in driving the bees by holding the empty skep by the left hand and tapping with the right. It was half-an-hour's hard work; and just as the last bee had bid adieu to its old dwelling the skep parted asunder, and the rotten combs went tumbling into the bucket beneath. It was now five o'clock, and thinking I had had enough driving for that day, I readily partook of my friend's truly English hospitality, leaving the fourth hive to be driven on Monday.

Monday morning found me at my post, to the surprise of one or two who were witnesses of my difficult task of the previous Saturday. The skep, like hive No. 1, was broken in at the top and likewise rotten. The bees, however, went splendidly, and I had the immense satisfaction of seeing the queen. I afterwards placed the best of the combs from this skep into bar-frames, fastening them with tape, and hived the bees in one of Neighbour's hives.

On Monday I got a bad sting through carelessness, and I think if your correspondent, 'A Suffering though Undaunted Novice,' will take courage he will yet succeed in driving his stubborn and spiteful bees. I should feel obliged, sir, if you would say if I did right in brushing the bees off the old combs? I was in a pickle, and it was the only thing I could think of doing at the time.—Geo. A. Manning, *Wigginton, Tamworth.*

[You acted with great judgment, and could not have done better than brushing the bees off the combs. You had a difficult job, and appear to have managed it well. —Ed.]

ANOTHER EXPERIENCE.

[656.] In a former number of your valuable *Journal* you gave instructions for bumping skeps, and at the same time invited bee-keepers to try the method, and report their success at the close of the season. A short time after your article appeared I purchased a swarm in a straw skep, after much 'higgling,' from a neighbouring cottager of the 'John Peel' type for 18*s*. I managed to get my purchase home safely, and congratulated myself upon having a good bargain, as I judged from the weight I had carried that I should get at least 30 lbs. of honey from it. It was about 7 p.m. when I reached home, and without more ado I tried the 'bumping process,' striking the edge of the skeps on the bricks three times sharply. Upon turning up the skep a spectacle met my gaze which I shall not easily forget, the combs had broken certainly, but not at the top, as was prophesied, some were broken off about the middle, and others about a quarter of the way up; honey was running freely, and drowning the poor bees by hundreds. I took the combs out as best I could, brushing the live bees off into an empty skep. The honey I had to strain off to clear it of dead bees, which were as thick as hailstones in a storm. Darkness overtook me before I could complete my work, making things worse, and adding to my discomfiture. When I came to pot the honey up, I found I had got exactly 12 lbs., so you will see, Mr. Editor, I was a loser to some considerable extent. Such is my first, and I may add that it will be my last, experience of 'bumping.' I would just like to mention that I don't see how bee-keeping is to pay at present prices, sections in fancy boxes at 6½*d.*, and run honey in bottles at 4½*d.*, are ruinous prices.—Drone.

FURTHER EXPERIENCE.

[657.] I am much obliged for your inserting my last letter (No. 623) in your valuable *Journal*, and for the advice you kindly added thereto. I also feel very grateful to the writer of 648 for his encouraging forecast as to my future success with bees and for his suggestions as to smoking. But if not trespassing too much on your kindness, may I be permitted to relate my further experience since writing you last?

You will remember, Sir, that I had, just prior to writing you, been forced to retire vanquished from an attempt on my third skep after receiving my seventy-second sting.

I then determined to remain quiet until quite recovered from these stings, for my hands were perfectly useless, before trying again to conquer the enemy; but in the meantime, to insure my right in them, I purchased them, their skep and their honey, with permission for them to remain where they were till such time as I felt inclined to tackle them again.

Shortly after recovering the use of my hands I heard of a lady desirous of selling two stocks of English bees in skeps. After interviewing the lady I purchased both her stocks of bees, her skeps and honey, and removed them to my own apiary with only one sting. This gave me confidence, and after watching these bees for some time, and deciding that one stock was too weak for wintering, I determined to unite the two according to the directions given by Mr. Root in his A B C book. After three failures, chiefly owing to my desire to transfer every bee in the hive on the bars, I successfully accomplished my task without receiving many more stings.

I now considered myself competent to tackle my old enemies, but determined, the season being late and the weather apparently unsettled, to transport them bodily to my apiary and allow them to winter in their own skep and with the whole of their honey, in which attempt I am glad to say I was successful.

Now, Sir, you and the writer of 648 kindly gave me your opinion of my manœuvres and advice how to act in the future, and, whilst not wishing to pit my opinions or experience against those of so experienced an apiarist as yourself, yet I must crave permission to relate what in my opinion had far more to do with my failures with No. 3 than any of the reasons you and 648 have assigned. On placing No. 3 (a very old skep) in my apiary two weeks since I discovered that for which I certainly was not prepared, viz., a back as well as a front entrance. True, I ought to have discovered this when separating the skep from its stand, but being placed close to a hedge I omitted to do so, and consequently, whilst I was diligently smoking at the front door the bees were escaping at the back. Mr. Cowan (I believe) advises an empty skep being placed on the old stand whilst driving to amuse those bees returning from the honey fields. But my bees refused to be so amused, knowing that I was departing with their honey field.

Hence, I believe, arose my discomfiture; but I am happy to say I have now comfortably put my five stocks into winter quarters, and, all seeming thoroughly satisfied, will, I hope, winter well.

In conclusion, I do not regret commencing my career as an apiarist thus late in the season, notwithstanding the eighty-six stings I have received since the middle of August last, for I have learnt experience, and hope to do better next season. Of one thing, however, I am very sure, that when trying to take condemned stocks in future I shall, before commencing operations, make sure they have no back door to their skeps.—THE UNDAUNTED NOVICE.

JUDGING AT SHOWS.

[658.] In answer to 640, page 479, I quite agree with your correspondent in a system of judging by points at honey shows, but what I think is this, if Mr. Clowes had taken first prize at Lichfield there would have been no cause for grumbling in his opinion. He says he exhibited extracted honey at Wolverhampton and took first prize and silver medal, and does not say that with a double exhibit he took equal first and second, which threw me into third. At the Gnosall Show I sent an exhibit which, through unavoidable causes, could not be extracted and bottled soon enough, consequently it was full of air, but came in second out of a class of eighteen entries. However, by the time of the Lichfield Show, it had all cleared off, which altered its appearance very much. The readers of your valuable *Journal* might infer rom his letter that I had taken third prize first, and got up to first with same honey, which is not the case. I cannot understand how he showed the same honey at the above named places, as the South Kensington was not returned by the Gnosall Show. I have always been satisfied with the decision of judges.—E. CRITCHLOW, *Maer Farm, Newcastle, Staff., Oct.* 15.

[We have received from a correspondent with the signature 'Bee Hive' a communication on the same subject as the above, which also contains animadversions on Mr. Clowes' letter.—ED.]

MR. GLADSTONE STUNG BY A WASP.—Whilst felling a tree in Hawarden Park, on Saturday, October 23rd, Mr. Gladstone was stung by a wasp on the eyelid so severely that he was unable to attend church on the following day. He is forbidden for a few days to read or write.

Echoes from the Hives.

South Cornwall.—Bees have done but slightly in this district. I took 200 lbs. off three hives in 1885, and this year about fifty from eight hives. I have driven over 100 this season with the same result—scarcely any honey. I adopt the non-swarming system, and have had one swarm in four years. I have seen two wasps to-day and killed them—one was a queen.—G. G., AMATEUR EXPERT.

Oxford, October 25th.—Here, in Oxford, the past season has been by no means good—not above two weeks in which bees could gather honey in quantity. As usual wet weather almost entirely prevented the bees working on the limes, which are rather plentiful here. By adopting the 'Cowan' hive, only with a greater capacity (to take eighteen frames), by doubling this I entirely prevented any tendency to swarm, and found that by thus giving the queen unlimited room to lay, the number of bees was prodigious, ready for the honey glut if it came, but it did not. From eight hives I have taken nearly 300 lbs. I found, in almost every case, the queen and brood in upper storey on removing it. I shall be condemned by bee-keepers generally when I report how I got rid of the syrup in dozens of frames which were unsealed. Other bee-keepers must have found difficulty in getting their bees to take all the honey or syrup from frames which are not wanted in the brood-nest during winter. My method was this: About 200 yards from the hives I placed the surplus combs against a tree in an orchard—not giving them all at once, but gradually—in a few hours in middle of fine day they cleared every one, and by contracting the entrances of all hives robbers were kept at bay. I found it answered best in the afternoon.—Br. W.

Revlin House, Donegal, October 23rd.—The honey season is now over for this year, and my report is a very bad one. There has been scarcely any summer weather here this year, in fact, altogether there has not been more than a month's fine weather, and then only at intervals, and the rain always coming on just as the different bee flora was ready for the bees to work on. I have put up thirty-two hives for wintering, a few of them have not enough honey, and intend to feed with candy. I had thirteen hives in the midst of heather, but got no sections filled owing to the weather being so bad when it was in full bloom. I use a wooden cover over frames, leaving a little less than three-eighths space over top of frames, and I think it is much better than making holes in comb, as the bees have not so far to move from one frame to another. I also feed on the bottom of the hive by pouring syrup in at the back and having a space marked off under frames, with quarter of inch strips of wood to confine the syrup, and I find it answers well, especially for stimulating in the spring, and it costs nothing for feeders, which would be considerable in a large apiary, and the feeding can be done much quicker.

I see some mention in *Journal* of half-pound sections. I have been using some of them the last two years; I got them from America; they are a very neat section, and are readily sold, especially to those who cannot afford to purchase a one-pound section at a time. I have driven nearly thirty skeps of condemned bees the last month, and I must

say I never saw such a poor lot of honey, the heaviest being about twenty pounds, and down to not more than three or four. I drove one on the 12th inst., and there was any amount of eggs and brood in all its stages, while in most of those driven a fortnight before there was no such thing. There have been no wasps about here this year; I killed up to thirty queen-wasps in the spring.—Geo. Turner.

NOTICES TO CORRESPONDENTS & INQUIRERS.

M. D'A.—*Wax-moth.*—By the inspection of your combs you will be able to discern the larvæ of the wax-moth. Possibly their destruction may not require so drastic a method as fumigation with sulphur. You can take out the combs, and with the point of your knife prick out the worms. Clear away the *débris* that may fall on the floor-board, crushing the larvæ before they can make their escape.

Old Times.—*Bee Pasturage.*—Crocus flowers do not secrete much honey; its chief value to the bee-keeper is as a pollen-producing plant. The flowers also afford convenient receptacles for pea-flour. Other early spring flowers suitable for bee forage are snowdrop, white iberis, myrobella plum, wallflower, willow, &c. Turnips and brussels sprouts make excellent pasturage for bees. 40 lbs. of honey per stock is a good average.

W. Wilson.—Your plan of operations has been so successful in getting the bees and honey from the chimney, that it should give you confidence in your second attempt. It would, however, be desirable to have the advice and assistance of some practical bee-keeper. There is a difficulty in those at a distance giving any precise advice in a complicated matter.

D. J. A.—*Extracting Sections.*—Section honey is essentially a table honey; but if you desire to extract it, there is no difficulty in doing so by means of the extractor, and with ordinary care the cells need not be damaged.

Neophyte.—We have a communication on the subject of your question, which will appear in our next issue.

George Turner.—We recommend you to consult your solicitor.

*** *The report of the General Meeting of the British Honey Company will be given in our next issue.*

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Withinshaw, A., Nantwich, Cheshire.
Wren & Son, L., 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Bee & Fruit Farming Co., Limited, St. Mary Cray, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Country Honey Supply, 23 Cornhill, E.C.
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FOREIGN BEES AND QUEENS.

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METAL ENDS.

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NOTICE.

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THE BRITISH BEE JOURNAL

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Editorial, Notices, &c.

NEIGHBOUR'S PRIZE SANDRINGHAM HIVE.

The above name was given to this hive by Messrs. Geo. Neighbour and Sons because it was first exhibited at the late Show of the Royal Agricultural Society at Norwich, when it gained the first prize over twenty exhibits. The stipulations laid down in the schedule were as follows :—'For the best and most complete bar-frame hive of a substantial character for general use in an apiary, with arrangements for summer and winter use, capable of being used for doubling to obtain extracted honey, or of being storified with one or two crates filled with $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ sections, to obtain comb honey. Price not to exceed 15*s.* unpainted. (Only one set of frames and one section crate necessary for competition.)'

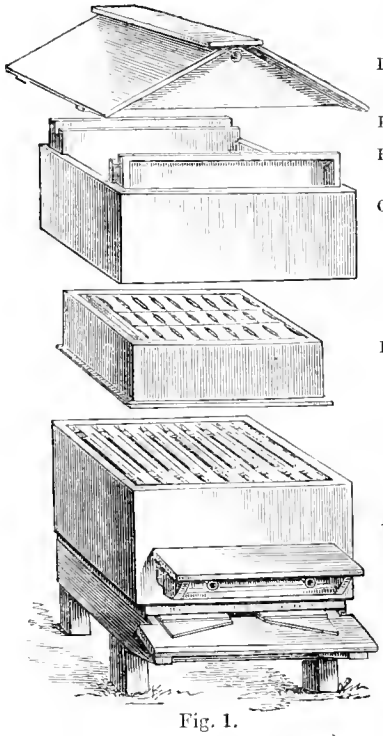


Fig. 1.

We may also mention, as a confirmation of the above award, that the first prize was given in Class IX. at the Tenth Great Metropolitan Exhibition, held in the Conservatory of the Colonial and Indian Exhibition in August last, to this hive, which possessed the same arrangements.

The construction of the stock hive is the same as in many hives previously described. It has ten standard frames, with G. Neighbour and Sons' improved metal ends, and the sides are double-walled. The arrangements for obtaining a doubling box form the special novelty and ingenuity of the hive. It will be seen by the annexed engraving (Fig. 1) that the upper box (C), immediately under the roof, is rather wider than the stock hive (A), which is the lowest. Four strips or fillets are nailed near the edge inside, and these allow the doubling box to rest on the top of the stock hive. On either side are moveable rabbets (E E), slid in a groove, which carry the extra set of frames. These may be seen, both being slightly raised in the woodcut.

Every bee-keeper is aware of the advantage of using upper frames for extracting honey and interfering as little as possible with the combs of the stock hive, where the brood is. When the season is over, and preparations are being made for wintering, this upper doubling box can be reversed, and thus forms an outside casing to the stock hive. The shifting side rabbets, before alluded to, can be packed in immediately on the quilt. The roof (D) snugly covers all, so that the hive is most compact for winter, being reduced to half its size, and thus not liable to be affected by violent storms (see Fig. 2). The porch, which is fixed by thumb-screws, is easily shifted from the stock hive, and screwed on to the outside of the enveloping doubling box.

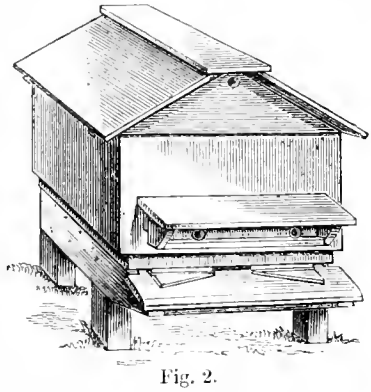


Fig. 2.

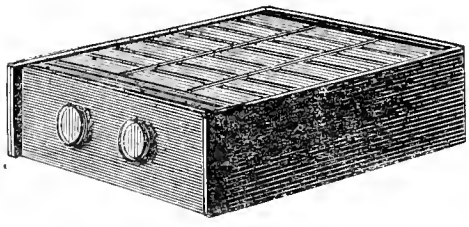
If, instead of 'doubling' for the purpose of obtaining extracted honey, the bee-keeper runs the hive for comb honey, the section crate B (or more crates for storifying) is easily placed on top instead of the upper set of frames.

Allusions have been made in this *Journal* to the impossibility of some of the hives which have taken prizes at Shows this summer being made for the prices named; but Messrs. Neighbour assure us that, although the profit on their exhibits is small, they are able,—by going to the best markets for timber, with the aid of steam power and the best

appliances in machinery, combined with the supervision of Mr. James Lee, late of Bagshot, well known as a skilled hive-maker, now in their employ,—to manufacture this hive as exhibited at the price named.

DINES' NORWICH FIRST PRIZE REVERSIBLE SECTION RACK FOR STORIFYING, &c.

This rack or case was invented by Messrs. Dines and Son early in the present year, and is constructed on an entirely new principle. Half bee-space being provided above and below the sections, it can be



used as a storifying-rack, and worked on the principle of inverting. It is furnished with twenty-one $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ sections, and tin dividers. A board is also supplied for fixing the sections in the rack.

To fill the rack this board must first be placed underneath, and each row of sections, with the dividers, set upon it. The two wood screws (the only safe and reliable means of keeping all secure) are brought into use, and the sections are so tightly screwed together as to render them as firm as one solid piece, propolisation being next to impossible. The board is then removed, and the rack is ready to be placed on the hive. Should any shrinkage of the sections occur, which is sometimes the case, the screws can be adjusted and the sections brought together as firmly as before. By this means the greatest accuracy can be obtained.

Messrs. Dines claim the right of invention, no rack of the kind having been previously exhibited, and we consider it one of the greatest improvements of the year, so far as racks and cases are concerned. Although it may appear under other names, it is advertised as The 'Norwich' Storifying Rack, the first prize at the Royal Show at Norwich this year having been awarded to it. It is also supplied furnished with $6\frac{1}{4} \times 5\frac{1}{4} \times 2$ sections.

We have received from the Rev. G. Raynor the following testimonial as to the value of this section-rack:—'I have had the rack in use in my own apiary, and, as an inversible rack, I consider it has no equal.'

BRITISH HONEY COMPANY.

The Annual General Meeting of the shareholders of the British Honey Company (Limited) was held at 105 Jermyn Street on Thursday, October 21st. Amongst the shareholders present were Major-General Saunders, H. Jonas, D. Stewart, G. Walker, F. Zehetmayr, Otto Hehner, W. Sharpe, F. A. Shaw, and others.

Mr. D. Stewart, the Chairman of the Board of Directors, having been called to the chair, read the notice convening the meeting, and the following statement on behalf of the Board.

After a year of work the Shareholders will desire to have some particulars of the operations and prospects of the Company.

The Shares which have already been taken up amount to between 6000 and 7000, which are distributed in varying quantities among 400 Shareholders; the number held by individuals ranging, with one special exception, from 200 to a single share; and the Directors are glad to report that a very large proportion of the Shareholders are British bee-keepers, who are directly interested in the question of a honey market.

With the experience of more than twelve months of actual trading, extending through two honey seasons, the Directors are of opinion that the Company is established on a firm and sound basis, and that it has full promise of future success.

The necessity of creating the market for our wares in the face of a certain amount of interested opposition, and also of combating the prejudice which had been excited by the large supply of foreign honey of more than doubtful quality, made it obligatory on the Directors to proceed with severe caution; but they considered it only prudent to lay out the capital in securing large stocks while honey was abundant, and to establish their business plant on a scale to prepare for a large future trade. The cost of the plant will be found to figure for a large sum in the balance-sheet, but it is money well laid out, and the stock of honey in hand represents a sum which should bring a good profit on sale. To secure the requisite stock, it was thought wise to give at first the highest price consistent with safety, but as larger quantities can be obtained at lower prices, a more reasonable and uniform rate was arrived at, and it is believed that at the lower rate a fair living profit is made by the producer, and that the certainty of payment with a market always ready is looked upon by them as better than the old nominally high prices with their attendant delays and risks.

In the earliest stages of the Company's trading the causes which so injuriously affected all commercial affairs, and the disturbed state of politics and the turmoil of two elections, had naturally a depressing influence on our business; but it has steadily made head against the adverse stream, and the dealings in the last two months give great encouragement to expect a prosperous and increasing trade.

The balance-sheet is made up to the 31st December, 1885, and it is believed that it will be readily understood by those accustomed to such documents. The profit on the trading has been as large as could be expected in the period, but is of course absorbed in the expenses attendant on a first year's working, and the amount of capital necessarily invested in the plant left only a limited amount for trading purposes. This check will not be felt in the coming year, for excepting the month of September, 1885, when we had begun to make a real advance, and were checked by the causes already referred to, we can report that the business is increasing, being in the

last two months more by 90*l.* per month than in any other like period since its commencement, the prospects of the Company are therefore very encouraging; and the returns of the present month, so far as we have gone, confirm this estimate.

Our travellers report that by degrees the Company's honey is taking the first place in the London trade, and as old stocks become exhausted, it may be expected to supplant all those unguaranteed brands which have too long misled the public. The Company's label gives a guarantee of quality. We have only to educate the public to a knowledge of the genuineness and quality of our supply to secure their favour, and the middle dealers will soon find their interest in co-operating with us. This education, we have reason to believe, has been greatly advanced by the splendid exhibits made by the Company at the recent grand show at South Kensington, which attracted the notice and admiration of all visitors.

The arrangements made by the Company for the transmission of honey to the Depôt in our own cans and crates have worked in a very satisfactory manner, and give satisfaction to the producer.

The Directors have used every diligence to improve the mode of packing, &c., so as to place their honey in the most attractive form before the public and to adapt it to the requirements of different classes of customers, and will continue in this direction to adopt every available means of improvement so as to make the British Honey Company's honey a popular article of household consumption.

The cost of advertisements and the means of attracting public notice have hitherto been kept within strict bounds, but the Directors consider that a larger sum may now be wisely spent in this direction.

The enlightened interest evinced by the Baroness Burdett-Coutts in all that concerns the smaller industries of the country has enabled the Directors to secure their Depôt at Columbia Market on very favourable terms, and its situation is very convenient for our purposes.

The Directors cannot close this report without expressing their deep sense of the loss which the Company and all British bee-keepers have suffered in the premature death of their first Chairman, the Rev. H. R. Peel, whose interest in the success of the Company was so constantly manifested. It was due to his liberal and generous enterprise in taking up a large number of shares that the formation of the Company was so rapidly attained, and his high reputation which secured for us the ready confidence of the public. The Directors very deeply deplore his loss.

Another Director, Mr. Blow, whose practical knowledge and business capacity were of great assistance in the formation of the Dépôt and the general arrangements for traffic, &c., has been obliged by his other occupations to retire from the Board. The two vacancies thus made having now to be filled up, the Hon. and Rev. Henry Bligh and Mr. A. H. Heath have consented to be nominated for election.

The Chairman gave his opinion that this statement showed the Company was established on a sound and satisfactory basis, and moved that the report and balance-sheet which had been circulated among the shareholders be received and adopted.

Mr. Jonas said that he had much pleasure in seconding the resolution. The fact of there being a debit balance of something over 500*l.* was by no means so discouraging as it might at first sight appear. The heavy outlay necessary to form the Company and to establish a new business (more especially during the past two years, when all branches of trade had been in a most depressed condition) had, he considered, been managed by the Directors with prudence. The outlay for advertising, &c., was not a large item, and although he would press upon the Board the necessity of avoiding any unnecessary expenditure, he was of opinion that now the business of the Company was improving, they might very well increase their outlay under this head. Judicious advertising would benefit both the shareholders and the bee-keepers generally throughout the country.

The resolution on being put to the meeting was carried unanimously.

Mr. Geo. Walker moved that the vacancies in the list of Directors be filled by the election of the Hon. and Rev. Henry Bligh, Vice-Chairman of the B.B.K.A., and A. H. Heath, Esq., Madeley Manor, Staffordshire (a connexion of the late Mr. Peel), which was seconded by Mr. Otto Hehner, and unanimously agreed to.

The formal business being completed, Mr. Fox Kenworthy, of the firm of Kenworthy & Clarke, Chartered Accountants, of 55 Coleman Street, E.C., was unanimously elected as Auditor to the Company for the ensuing year.

The Chairman congratulated the meeting on the unanimity of their proceedings, and said that although the Company had not as yet done anything very wonderful, they had laid the foundation of a good and prosperous trade. The Directors had given their best energies to the well-being of the business, with a view to protect and improve the property of the shareholders in whose interest they had laboured. The Company supplied a want that had long been felt by those interested in the honey industry of the country; and it seemed to be in a fair way to become a prosperous and productive association. Their first duty was towards the shareholders, but they kept in view the primary object which had led to the formation of the Company, viz., the advancement of the honey industry of the British bee-keeper. It would be remembered that the Company had power by their Articles of Association to deal in imported honey as well as in that produced in this country, but they had hitherto had no occasion to use this power, nor did they propose to resort to it unless the interest of the shareholders and the British producer should at any time require it. He should state that the Directors were discharging their duties without other reward than the consciousness that they were helping on a good cause, inasmuch as the profits, though satisfactory for the limited period over which the accounts extended, were not such as to justify any payment of fees.

Mr. Jonas moved that the best thanks of the shareholders be given to the Directors for their services rendered to the Company during the preceding year. He considered that both the shareholders and bee-keepers throughout the country were greatly indebted to them for their untiring exertions in placing British honey in the way they had done before the public in London.

Mr. Otto Hehner seconded, and on its being put to the meeting was carried with applause.

Dr. Geo. Walker, in returning thanks to the share-

holders for the cordial vote of thanks to the Directors, remarked that it had been with them a labour of love, as their fees were represented by a minus quantity. They had devoted their time for the benefit of the shareholders, and were out of pocket for railway fares, &c. However, they were confident that if not at the next general meeting, at all events at the next but one, they would have the pleasure of declaring a dividend. The deficiency of 500*l.* was not large, considering the necessary expenses of floating the Company. They were laying the foundation of a good solid trade in honey, and they felt confident that this money had been well expended. In 1885 they had bought over 1000*l.* worth of honey, and this had been very much to the advantage of the British bee-keepers, as they had not bought, nor did they intend to buy, foreign honey, so long as they could get British honey at such a price as would give a fair dividend to the shareholders. They had taken the power of being able to deal in foreign honey, as it might happen, though it was very improbable, that there might be a scarcity of British honey, or the price might be too high for them to deal in it at a profit. The result would be that, after all the trouble they had taken to establish a trade in British honey, if they had not the power of dealing in foreign honey the work of the Company would be at a standstill, and their labour would have to be begun all over again. More honey had been offered than they could buy, as the capital was too small to allow of their holding more than a certain amount of honey, and it required very careful attention on the part of the Directors to manage as they had done. Producers were awaking to the fact that a smaller price, and that certain, was much better than a higher price which was never paid, or, at least, only after a considerable length of time. The more honey they sold, the higher the price they could offer to the producer, as the expense of selling one hundred tons a-year was not much more than if they sold half the amount. What was wanted was to get honey into general use as an article of food. In Switzerland it was commonly seen on the breakfast-table of most of the hotels, just as marmalade in Scotland. The Directors were fully alive to the advantages of advertising, and they intended to increase their outlay in this respect; they had been careful not to launch into great expense on this head until they had seen their way to do it with advantage to the shareholders.

The meeting then dispersed.

USEFUL HINTS.

After a week's continuance of sunless days, with strong north-easterly winds, we are again enjoying mild, bright weather, and the bees are carrying in pollen. Hereabouts colonies, as a rule, are strong, and well provisioned for the winter, with natural sealed stores, and, where carefully prepared for four months' rest, or semi-hibernation, as some will have it, afford fair promise of passing well through the trying ordeal of an English winter.

Dryness is a most important condition for wintering, hence floor-boards projecting beyond the hives are objectionable because they catch the rain, snow, and eaves dropping, and thus, by absorption, moisture is transmitted within the hives. Hives, therefore, should have their floor-boards flush with the outer walls, and all should be thoroughly well painted. All hives should incline slightly towards the front, so that moisture, if accumulated within, as well as refuse, dead bees, &c., may have a ready exit, the entrances being kept at summer width.

The Aspect of Hives is an important matter, and on this subject, as on most others, opinions vary greatly. Many years ago we had a correspondence with a friend in Devonshire who advocated a northern aspect. His apiary at that time consisted of eighteen hives, fifteen of which were skeps, and all were placed with entrances towards the north, some of them being completely surrounded, and partly overshadowed, by evergreen shrubs on the south side. His apiary had been thus placed for over ten years, and he asserted that he obtained earlier swarms, and more honey, than his neighbours. Previously to adopting a north aspect he had kept half his hives facing south, and the other half facing north; but, on weighing them in the autumn and spring, he always found that the southern, as compared with the northern, consumed about ten times the amount of food. He had no difficulty in keeping his second swarms through the winter, with a north aspect, and, indeed, considered them at least equal to the prime swarms. The climate of Devonshire, no doubt, from its mildness, is favourable to such an experiment, but the system has its advocates in northern and eastern localities also. We have tried all aspects, and have no hesitation in stating our preference for the south. Whichever aspect you give your hives, the bees will always form their winter cluster on the south side of the hive. This we have repeatedly proved. With a southern aspect, therefore, on every bright winter's day the bees are enticed forth for a cleansing flight, and there is little danger of dysentery ensuing from long confinement. But if the aspect be north, on very few occasions will they traverse the colder parts of the hive to reach the entrance, which, being in shade, offers them no inducement to issue forth; consequently the health suffers, and too often dysentery prevails, although, undoubtedly, the consumption of honey is far less. We therefore recommend a southerly aspect, or one varying slightly towards the east, as the best for all seasons. All apiaries, or single hives, should have shelter on the north and north-east sides—walls, buildings, trees, or evergreen bushes.

If, however, any of our readers wish to try a northern aspect, let them be particularly careful to protect their hive from wet. It is well that they should occupy an outer case, with good projecting roof. We have wintered strong colonies thus, very successfully, with a small consumption of honey, and they have come out remarkably well at spring. This is a subject which we do not remember to have seen discussed in the *Journal*. Will any of our readers give us the benefit of their experience?

When a southern aspect, in the summer, is preferred, shade from the noon-day sun is desirable, and if not to be obtained from trees, artificial shade should be provided.

Earthen Pans form excellent roofs for skeps, and are the most durable and the cheapest cover where they can be purchased at one shilling each. Padded underneath with hay, shavings, or sacking, they sit firmly on the hive, and no storm, however violent, displaces them. Haybands, rolled closely around skeps, also form excellent winter protection, and render the domicile on a par with the best double-walled hive as a winter receptacle for bees. Our earliest and best swarms usually come from medium-sized skeps thus prepared. But there are skeps and skeps, and closely-woven, thick-sided, well-made, flat-topped skeps, we fear, are the exception and not the rule.

Feeding should have been finished long ago, but, where neglected, by no means should syrup be given now. The only admissible food at this late period is candy, barley-sugar, and sealed comb-honey. In frame-hives the latter may be still given by slipping quietly into the hive, beside the winter cluster, a frame of honey-comb, and very little disturbance will be caused by so doing. Colonies in skeps may be fed by gently pushing down, through the feeding-hole, sticks of candy, or barley-sugar, but in all such cases disturbance must be avoided. Great care must be taken not to shake or jar the hives, and the application of a little carbolic solution, on a fine day, will check the rush of bees, on

the admission of light, and enable the operator to place the food in the desired spot without causing excitement to the bees. The food, for winter feeding, recommended by experts of bygone days, consisted of 1 lb. of loaf sugar, ½ pint of water, and ½ lb. of honey, simmered for a few minutes over a slow fire, and, when quite cold, given to the bees at the top of the hive. Often have we practised this with good results, and in mild weather the bees will take it freely.

Weight of Hives.—The following is an estimate of the weight which should be allowed for combs, bees, and pollen in a moderate-sized hive, when closing up for winter, given by Mr. Payne many years ago:—One year old colony, 2 lbs.; two years old, 3 lbs; three years old, 3½ lbs.; four years old, 4½ lbs.; five years old, 5½ lbs.; six years old, 6½ lbs.; seven years old, 7 lbs. The calculation was applied chiefly to skeps, in which it is impossible to weigh the combs separately, but we should place the weight much higher. Take, for instance, a colony four years old: here we should like to have 4 lbs. of *bees*, which would leave ½ lb. only for comb, and the pollen accumulated in four years! Combs solidly filled with old pollen are about as heavy as when filled with sealed honey, and it is very bad policy to winter on such combs at all. We always remove such from the hive, and give in lieu thereof those from the lower part of which the honey has been extracted, provided the comb consists of worker cells only.

Cellar Wintering, which is highly spoken of and extensively practised in Canada and the United States and Germany by many eminent apiarists, has rarely, we believe, if ever, been attempted in England. During a long and cold winter it is likely that colonies might be benefited by the protection and shelter thus afforded in the moderate temperature of 45 or 50° Fahr. It would not be advisable to 'cellar them' before the end of November or the early part of December, since fine days, in which the bees can fly and 'play' about noon, generally occur in these months, and such late flights are of very great advantage. Our most severe and longest frosts have usually commenced about Christmas time, and if we are likely to be favoured (?) with such again we shall hope to try the system by removing a few of our colonies below stairs into a well-ventilated dark cellar, leaving the entrances open at full width, and keeping porous material only upon the frames. This plan, at all events, will do away with the necessity for brushing away melting snow from the hives, and will offer no inducement to the bees, on bright days, to issue from their hives, and to perish on the snow-covered ground.

Under the conditions named, we are inclined to think that an imprisonment of six or eight weeks may prove advantageous to the bees. We do not see why any other room or outhouse should not answer the purpose as well as a cellar, except that the temperature would vary more; but if dry and dark, the bees would remain as quiet in the one as in the other. Dzierzon remarks 'Whoever is accustomed to house his hives for the winter in a cellar or other place that may be suited for the purpose, need not be in any haste about it. Sometimes it snows and freezes in the first half of this month (November), and later there come warm days when the bees may still fly out and cleanse themselves. Towards the end of the month, or at the beginning of the next, when the winter threatens to begin in earnest, the housing may take place. The bees must not be debarred from exit and entrance in their winter quarters.'

Have any of our *confrères* tried this plan of 'winter cellaring' or 'housing?' If so, will they kindly report their experience for the benefit of all? Our Canadian friends could doubtless have given us some useful hints on this subject, and we regret that it was not introduced at the pleasant meeting held on the 20th ult.

The Enemies of Bees, in the winter months, are birds and mice. Amongst the former, we fear, the different varieties of the Titmouse, particularly *Parus major*, must be classed. A few shots, occasionally fired in the vicinity of the apiary, by those who object to destroy these beautiful and useful little birds, will have the effect of causing them to seek other hunting grounds.

Mice may be prevented entering the hives by nailing a piece of perforated zinc across the entrances, with a small opening for the exit of the bees. Very few persons object to trap and destroy mice, considering them most destructive vermin, and yet, we suppose, they have their uses. In winter evenings our hearthrug often forms the playground of several youthful specimens, and very amusing it is to witness their innocent gambols, peeping out of their holes before venturing to advance, then frisking round and round, leaping over each other's backs, quarrelling for stray crumbs, &c., very much after the manner of kittens at play.* They were, however, extremely fond of honey and pollen, but plain crumbs, containing neither, they utterly despise. *Au revoir* to all our friends. May we all, together with our bees, 'rest and be thankful' until spring, with her roseate hues, again greets and wakes up to life both men and bees.

JOTTINGS BY AMATEUR EXPERT.

'Mel' sapit omnia.

Our second evening with our Colonial brethren was almost better than our first. Jermyn Street is more snug and homely than South Kensington; we could get more in touch, and, moreover, could hear better. How I sympathise with our country cousins whom distance does not allow to participate in these rare treats. They scarcely know what they miss.

I had another look at the Ontario Honey Exhibit a few days since. The bulk grows less, and well it might, as I heard of weekly takings of 160*l*. Mr. Jones says he *will* sell it all, and I quite believe he will make good his words.

We may learn something, by a look round, of the difficulties of keeping comb-honey in a saleable condition for any length of time in our humid climate. The nicely-packed section cases containing one dozen and glazed, looked as well as when first staged, but the few here and there, set about singly and unglazed, are absorbing our London fogs and mists rapidly, which neither improves their flavour nor appearance.

I sincerely hope the friendship thus begun between us as bee-keepers, will not only be maintained, but increase as time rolls on. Why not? Are we not the children of one mother Queen?

'John Peel' bears his troubles lightly, although he is away from the 'sleek herd.' I believe the Honey Companies have more to do with the present state of the market than he gives them credit for. I am not in their secrets, but was obliged to hear about 'weekly sales exceeding 150*l*.' from one who knows something about the B. H. C., so that must make a difference as well as the bad season, and the B. H. C. is only one out of several.

We are getting a run of doleful letters from novices.

* We venture to say a word in favour of mice, notwithstanding an amusing instance of the estimation in which they are held, which comes to our mind at the moment, viz.: An enterprising apiarian friend, when travelling by rail in company with several farmers, related to them his experience in bee-keeping, and urged them to adopt it as advantageous to their crops, and also to themselves, when one of them exclaimed, 'Why, do ye say so, sir? Well, now, I daresay ye keep *white mice* as well as bees! Now dean't ye, sir?'

How their perusal carries one's mind back to the old days of swollen limbs and feverish skin, and nights of bee-keepers' nightmare! Some of our correspondents have the make of good bee-keepers about them if they will adopt the motto, *Nil desperandum.*

Our friend 'Drone' (who is evidently a good worker) must try 'bumping' again. If his skep is very full of bees let him first 'close drive' most of them into an empty skep, and having placed that on the ground alongside, tilted up by a large stone to give ventilation, 'bump' the skep containing the combs, and brush the remaining bees from each comb on to the ground so that they run in to join their fellows; but when there are not many bees, 'bumping' is the best thing out. If his honey is good I advise him not to sell it at the starving price he quotes.

So the carbolic fumigator is no better than other quieters when bees are furious. They are not to be 'gently breathed' into submission. The next remedy advised is creosote. Tar and honey! Ugh! But the days of 'Let 'em alone' are come again.

Are we getting a godless set? How many of our craft do most of their manipulation on Sundays, and do not blush to own it in the *Journal?* Now, I confess I should attend to a case of 'robbing' or a valuable queen 'balled' even on a Sunday, just as I should draw my ox or ass out of a pit, but there I should draw the line, and to Sunday bee-keepers I say 'Do likewise.'

I guessed 'John Peel' was a parson, but 'Drone' otherwise defines him. If he is a 'cottager' of an ignominious type, I hope he don't manipulate on Sundays; but if he is a parson, and I still think he is, will he take these Sunday bee-keepers in hand as it is out of the line of—AMATEUR EXPERT?

ON READING MR. MARTIN TUPPER'S ACCOUNT OF THE BEES AT ALBURY HOUSE.

Now that we know where bees delight to dwell,
We see where poets honied words may find,
And how the numbers that we love so well,
Both soothe the heart, and yet enrich the mind!

What great examples these in winter hours,
Which live upon the store of summer days,
And travel far in search of fragrant flowers,
Bringing their sweetness back with humming lays!

So doth the gladsome Muse ofttimes take wing,
And from Parnassus' heights fresh solace bring!

EOTHEN.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SECTIONS.

[659.] Notwithstanding so much had already been suggested as to the size of sections, the Canadians seem to have started the agitation anew. It is, as Mr. Jones says, quite unnecessary for bee-keepers to change all their appliances simply to experiment upon sections of different thicknesses.

It is several years since, after trying various sizes, I found that a section of the usual dimensions, but $1\frac{3}{4}$" through, worked without separators, would give a weight slightly heavier than the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$" with them. The latter seldom gives a pound, but the narrower section will nearly always run to 16 oz.

Here, then, we have the size, which, without dividers, will give the exact pound, and one which can also be worked in all crates used at present. I do not see the necessity of a section even thinner with a larger surface. By using such we get also more of the mid-rib, which even in natural combs is where the most wax is used. A thin comb, having a large surface, is more liable to breakage in transit, more foundation is required; and where are the advantages? I can see none. The British public is not to be deceived into thinking that a larger surface means more weight; and why should the honest producer wish to practise this kind of 'veneering?'

The statement that more honey will be stored in $1\frac{1}{2}$" sections, or even thinner ones, is simply an assertion which has not been backed up by proof. On the contrary, I can state as a fact, that in crates standing side by side upon the same hives, the $1\frac{3}{4}$" sections have been filled and capped more rapidly and in better condition than those of $1\frac{3}{8}$" only.

No doubt there are many who would like to use the $1\frac{3}{4}$" sections without separators in preference to the 2" width; and no doubt also the $\frac{1}{2}$-lb. size; but this matter must rest with the dealers. If the latter offer nothing but the old pattern what are their customers to do? There are not many who care to make sections at home, but if some enterprising manufacturer does not come forward, the number who do make their own will be largely upon the increase.

Two years since I worked a number of $\frac{1}{2}$-lb. sections $1\frac{3}{8}$" thick $\times 4\frac{1}{2} \times 2\frac{5}{8}$" (or three across two of the 'pounds'), with the result that the bulk of my crop will in future be produced in the 1-lb. size. My own sections have a bee-space top and bottom, and hence are $4\frac{1}{2}$" deep, but for the American pattern I recommend $4\frac{1}{4} \times 2\frac{3}{4}$" (full) $\times 1\frac{1}{2}$" through for the $\frac{1}{2}$-lb., and the usual $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{4}$" for the lb.

The favourite section of the future will *not* be a 'sixpenny' section, neither will it be a *very* thin one. Though I claim to make two of my half-pounds at the cost of one of the pound size, there are just twice the number to handle in many ways, and there is not sufficient remuneration, while, put it how you will, a crate of eighteen one-pound sections is finished off as quickly as one of the same size which will take only thirty half-pounds. This is a fact found by experience, and one worthy of serious consideration. These results were obtained from twin crates, standing side by side upon the same stocks.

I advise caution in adopting small sections for still other reasons. They are not likely to bring an increased demand, as it is a smaller quantity at the same rate as the 'pound,' and not the latter at a cheaper rate, which last is what I understand by creating a larger demand at a low figure. Moreover, I find some grocers do not care to be bothered with anything less than the 'pound' section, while others who will handle the half-pounds do not find so good a sale as was expected, the former being the favourite, as it will ever remain, with the customer, retailer, and producer alike.

I would mention that, when using sections less than $1\frac{1}{2}$" through, it is absolutely necessary to fill them with foundation, and the same must be fastened securely down both sides as well as the top; or, the bees beginning in the centre of the crate, the section either way, will have their combs spread out at the bottom into those adjoining, each succeeding comb inclining farther from the centre of the respective sections.

Though there are many who still claim that sections cannot be worked true without separators, my own experience proves them in error, and I will repeat what I long since stated in the columns of this *Journal*, viz., that to ensure good combs without dividers, the hive must stand quite upright, the colony must be fairly strong, and when removing finished combs push the remainder up together at the centre, and then add fresh sections with foundation at the ends of the rows. See also that the bees have plenty of room, and be sure that the fat part of any section is next the same of those on either side. This is the whole secret of being able to dispense with separators, their expense, and inconvenience. —S. SIMMINS.

1¾ SECTIONS WITHOUT DIVIDERS *versus* 2-INCH WIDE WITH THEM.

[660.] Perhaps Mr. McKnight or some bee-keeping friend would kindly say if in Canada separators are in general use, and whether those beautiful and evenly finished sections exhibited at the Colinderies were produced with or without their aid. I can find no direct statement on the matter in the *B. B. J.*, but if, as I infer from its reports, they have not been used, does not that exhibition reply affirmatively to the query of 'Useful Hints' in last number, October 21st, 'Can the ½-lb. section be obtained well and evenly finished and with perfectly flat surface, and without bulging, without their use?'

I was very successful in producing in the summer of 1885 perfectly even 4¼ × 4¼ × 1¾ 1-lb. sections without dividers; and as you, Mr. Editor, allow beginners to relate their trials and experiences in bee-keeping in the *Journal* for the encouragement of others of the same standing, if you see anything in mine worthy of notice, perhaps you will kindly extend to me the same latitude.

1884 was my first year as a bar-framist, when, from driven bees in a home-made hive—a tea-chest within a tea-chest, packed between with cork-dust—I took 95 lbs. of honey. 87 of this in sections; total expenses, including cost of hive, about 6*s.*: sales, 4*l.* 10*s.*; net profit, 4*l.* 4*s.*

I was much troubled with the wooden dividers between the sections buckling, and having seen in *B. B. J.* of January 15th, page 26, a statement of Mr. Simmins', that his 1¾ sections without dividers 'are preferred to any in the market,' I resolved to also try to work without them. None of the dealers supplied the 1¾, and I had to reduce the regular 2-inch section, by taking off a quarter of an inch all round.

The stock I experimented with in season of 1885 was a poor lot of driven bees that had wintered badly; when my first stock had six frames of brood in the spring, this had but one. I gave it two frames of brood, placed it in a roomy hive, frames at right angles to entrance, stimulated, spread brood, and when the honey-glut arrived put on eight sections in a rack of the Raynor-Abbott pattern simplified. The sides were ⅕ inch, the ends of ⅝-inch stuff, the ledges for sections triangular slips let into ends with a tack to sides, and with them coming to a point underneath, so that no bees were crushed in manipulating.

When bees were well up in this rack, I placed on a second underneath, then a third, and continued adding racks till I had in all twelve on, containing ninety-six sections, bees working in the whole of them. I took off no section till all but those at the two ends of the rack were filled; these I placed in the centre of a fresh rack, filling up with empties, till close of the season, when I filled up with all half-finished sections. The only other manipulation necessary was moving racks to the centre to take the place of those removed. That hive gave me 110 beautiful and evenly-filled sections, the few partially filled I had with frames from body, produced 10 lbs. extracted: total, 120 lbs. The frames I used were reversible; in the early part of the year they threw the honey up to the sections, but later on, when I reversed, the bees did the same with the upper part of the comb, filling it, as they had done the lower part, with honey. This last season I placed the 1¾ without separators in the same rack with 2-inch sections with them. The 1¾ were first filled.

The wholesale dealer who bought my sections wrote to me this season to send him a large quantity of sections, the same as those I had given him last year: he had been greatly pleased with them, and thereby verifying Mr. Simmins' remark, 'They are preferred to any in the market.' I found a spirit-level, to keep the hive perfectly horizontal, indispensable. The 1¾ without separators requiring but one bee-space between the combs allows for the same thickness of comb as the 2-inch with them. My sections reduced from the 2-inch wide not being as neat as I could have wished, I ordered a number of 1¾, and had them specially made in America. I brought them over last spring, and having more than will suffice for present needs, will be most happy to share with any one wishing to further experiment. Their advantages over the 2-inch wide are:—they look better, they occupy smaller space in the hive, bees like them better, produce more of them, and, finally, we will not have to alter our crates, which we would have to do in following the lead of our Canadian cousins, the appearance of whose sections is pronounced to be of such superior excellence. —W. B., *Patrickswell, Co. Limerick.*

BEES KEPT IN LONDON.

[661.] As my newsagent failed to deliver your number for September 30, I have only just seen the letter therein from Mr. Oldham of East Barnet, in which it is suggested that the honey made in my apiary at South Kensington is of a 'beautiful golden colour' and collected by the 'bees helping themselves to the innumerable sweets in the shops and sugar refineries.' The suggestion is so grave a reflection upon the habits of my bees that I must ask space to refute it. There is no sugar refinery anywhere near, and I do not think a single ounce has been stolen from any shop. The honey is not golden brown—it is of the colour of London smoke, a comfortable light grey, and some fair sample sections were exhibited on the Middlesex table at the July Show, and especially marked as grown within a mile of the Albert Hall. There were also some good sections included in Neighbour's Show at the Healtheries and similarly marked.

Last year three hives produced a surplus of about 50 lbs. This year two hives have done far better than ever before during the twelve years in which I have kept bees here. Most of the surplus honey was collected towards the end of July and in August. It is drawn from the flowers in a thousand window boxes in Kensington (where the bees are well known), from the limes, and from Kensington Gardens. Moreover the two stocks were exceptionally strong and were not permitted to swarm. The original stock was supplied to me by Neighbour in 1874, and I have always had bees and honey to give friends. The keeping of bees at all in London was a doubtful experiment, but I have profited much in past years by the counsel of Mr. Neighbour, always courteously extended. The hives from which the honey was produced this year were those of Dines and Son, which took the second prize at Knightsbridge in 1883.

If Mr. Oldham is still incredulous I will send him a section by parcels post if he will give me an address which can find him, and he can then report to you whether or not it confirms the unkind suggestion as to its origin.

I ought to add that when I stated that I had taken sixty-three pound sections I meant that I had set apart that number to keep after breaking up those which were

not worth keeping. Most of the sixty-three were quite free, but others, of course, not quite full. I daresay the weight of the sixty-three was somewhere between 50 and 60 lbs.—J. F. B. Firth, *South Kensington, October* 20, 1886.

HIVES AT HEATHER.

[662.] All the excitement of preparing hives for the journey—extracting, removing sections and quilts, substituting perforated zinc or sugar-bagging, unscrewing legs off, bottling up the doorway at dusk with a strip or wire-mesh or other suitable substance; this is only the precursor of the true anxiety which invariably accompanies the excursion.

Avant-couriers had previously scouted for a likely spot quite on the edge of the ling, where the bees would be able to go on gathering from the clover, naturally late at such a height above the valley land, and thus be able by a simple volte-face to change their feeding-ground the moment the heather began to bloom. Thus the advantage of placing hives on the *edge* of, rather than absolutely *on* moors is obvious, for if there be plenty of food on the right hand it is quite equal to being surrounded by it, and sometimes the heather is so late in blooming that bees are starved to death when they have only one string to their bow, so to speak.

A spring-lorry (a four-wheeled sideless van) has to be ready shortly after daybreak, but on its arrival the driver has forgotten to bring straw; fourteen hives are trundled up on a small stretcher; and with an agreed upon penalty to fall on the owner of the first leaky hive, off we go. One of the fraternity has to return some distance for forgotten lunch, and as the vehicle slowly shakes along, the rear being kept by two proud pedestrians, it is found to be accompanied by one, then two 'winged messengers' from within somebody's hive; these have to be despatched whilst on the wing 'by hat or stick or rude umbrella;' it will not do to let them swell, by small and regular additions, into a *queue* of active workers, which without doubt would get to business before the eight miles were passed. Ownership of the truants was duly proved and penalty paid at the first halt.

The calf-garth at the deserted farmhouse is reached shortly after breakfast. An agreement is made that the uncorking of the three properties shall be simultaneous; the hives are placed and legs fixed on, but a mischievous one breaks the compact by slipping on his veil and quietly withdrawing the zinc from three doorways. As surprised burglars slink for weapons, so did the two unwary ones sneak off for veils and gloves, and all went well.

Oh, the pleasant visits to the ling, by tricycle, train, or 'Shanks his mare'! The sandwiches, the duly tempered milk, the bilberries, the scent of heather in the early morning air, the heavy smell of heather-honey pouring out from every porch! The tramping home and arguments *en route*, all incomplete without an almost constant smoke-offering in memory of Jean Nicot. These were the great charms. The medal, however, has its reverse, and so had our apiarists. (1.) The bees are transformed, as if by magic, from quiet, law-abiding citizens into furious demons, and this by the peculiar aroma of the moorland blossom (I will try the effect on them of a piece of new corduroy some day, with the same object). (2.) The bees will not go up into sections as they should (why should they when they haven't filled the frames?) (3.) An attempt is made to force section-working in a doubled hive by driving the bees down, removing the upper hive and substituting sections; yet the bees will have none of it, 'charm he never so wisely,' and attack the operator in myriads, whilst his companion, roaring with laughter, surveys the work from the comparatively quiet seclusion of the space between the hives (I have before remarked on the merriment caused by bee-mishaps). (4.) Mr. Farmer's wife thinks she is to have *6d. per week per hive* as rent. (5.) Mr. Farmer anathematizes the bees for daring to come over the boundary-wall to block and black up one of his eyes the very day before he has to accompany a shooting-party, who may or may not believe his narrative of the occurrence. (6.) Mr. Farmer also turns a colt into the garth under the impression that 'he'll never meddle o't hives.' I do not know, though, who began it, but *there was some meddling*. Dr.—An experimental straw skep upset, the combs and bees trampled under foot and destroyed. Cr.—A five-barred gate burst through, as if a four-footed beast hadn't had time to leap over. The meddling must have been mutual. (7.) A be-draggled home-coming, wet through, and in inky darkness, a sorry counterpart to the jubilant procession outward bound; this last agony was spared me by the great kindness of my two friends, who did my work themselves.

Now, Mr. Editor—you whom we must claim as foster-father, for we are without 'light and leading' in these benighted parts—how are we to cook our hare now we have obeyed Mrs. Glasse's instructions by first catching it? How are we to extract? The masticatory organs shall extract the sections, but as for the honey contained in the frames it is as stiff as marmalade, and *won't* run. Scraping it off with a spoon down to the midrib, warming near the fire, squeezing through wire gauze the mahogany or teak looking brood-combs, pressing the newer combs in a new honey and fruit press, all fail. We get a something in the honey we don't want, bits of wax forced through the presser or something somewhat resembling the combined ingredients of the time-honoured plum-pudding. Pollen, exuviæ, old grub surtouts, *et* H. G. O., are not nice eating even in heather honey. If you can tell us how to get clear heather honey kindly do so.—R. A. H. Grimshaw, *Horsforth, near Leeds.*

MINORCA HONEY.

[663.] Through the kindness of Mr. F. C. Andrew, of Minorca, I have been enabled to add to my collection two different kinds of the delicious Minorca honey, which entirely surpasses, both in flavour and aroma, any I have yet tasted, even the far-famed honey from Mount Hymettus. Last week I received two large bottles of honey carefully packed, one a very light specimen and the other much darker. The first, in appearance, is more like our clover-honey, though of a thicker consistency, having a very powerful and fragrant aroma; the flavour is almost too delicious to describe, being particularly delicate and aromatic, with a soft taste. The darker kind has the same exquisite flavour, embodying the delicate taste of our light clover honey, having somewhat of the rich pungency and colour of heather and yet bearing the piquancy of honey obtained from aromatic plants; but, decidedly, the preference would be given to the lighter variety, although the darker is more luscious.

Mr. Andrew, writing about the two kinds, remarks, 'The very light honey is Minorca's best, except that it is the product of old-fashioned hives, and therefore not extracted by the machine; the darker honey is my own, and was extracted after the sections had monopolised all the white honey, but, excepting the colour, it is as superior as the other.'

Mr. Andrew has not extolled the praises of the Minorca honey too highly. The honey of Attica, mixed with Falernian wine, has been compared to the nectar of the gods, and one cannot help applying the same terms to eulogise the honey of Minorca.

Some of the orange-blossom honey from Portugal is very fine, and I doubt not that the fertile regions in Spain could be made to produce large quantities and of a superior quality, and even from Majorca, the larger island, good harvests could be obtained; but as Mr. Andrew says in his letter, 'None of them can produce our rich Minorca honey; we have the exclusive paten-

to that.' It appears that hardly any honey is exported from the island, as very little is raised by the natives; the old-fashioned system producing but little. However, the prices there show what could be done. The light honey Mr. Andrew purchased of a farmer at a peseta the pound (12 oz.).

The Canadian bee-keepers have been showing us, by their grand exhibit (though I have not yet had an opportunity of passing an opinion on Canadian honey), what can be done in their country, and we learn of vast apiaries being successfully worked in Australia and New Zealand, and with such an enthusiast and well-wisher to apiculture as Mr. Andrew, I have no doubt we shall soon hear of the industry having largely developed in Minorca. That island will never be a rival in the quantity produced, as the area will not permit of that, but from the nature of its pasturage for bees it must ever stand pre-eminent with regard to quality.—Wm. N. Griffin, *late Hon. Sec., Devon and Exeter Bee-keepers' Association, Freshford, Somerset, October* 26.

'THE VOICE FROM THE WEST.' (634.)

[664.] I can hardly express my disappointment and surprise at the reply given by your correspondent 'John Peel' (654) to my communication (643). Surely your correspondent did not assert that his County Association had died because its work was done without having a full knowledge of the several methods by which its 'fruit' was brought to maturity at so early a period.

I felt confident that 'John Peel' would, in order to justify his statement, make public the *modus operandi* of his Association, and thereby benefit those counties whose Secretaries assert that the more work they do the more they find still remains to be done. How gladly would such information have been received by our shining lights who are still at the helm as Secretaries of County Associations. 'John Peel' considers that the B.B.K.A. 'regards with askance those apiarians who do not belong to any County Association.' I can readily understand our Central Association refusing to incur the expense of sending an examiner for 'John Peel's' benefit; it is no part of its duty to expend its funds in this way.

I must still maintain that the B.B.K.A. has and is still rendering 'John Peel,' and every other bee-keeper, considerable assistance in the disposal of honey. The Association's Exhibitions at the Royal Agricultural Shows (and one of these was held in the West, viz., Shrewsbury, only a very short time since), its distribution of such leaflets as 'Honey as Food,' all tend to cause a demand for honey. As a member of the B.B.K.A. I feel proud of its work. I look upon it as the fountain whence the present position of bee-keeping in this country has sprung. 'John Peel' may rest assured that he is not at all a 'dangerous elephant;' he may become a useful one if so inclined. He may obtain those 'social ties' and become one of the 'big herd' by the modest outlay of five shillings per annum.—A Member of the B.B.K.A.

A VOICE FROM THE WEST.

[665.] Recently I visited the Colonial Exhibition, and naturally, like a good apiarian, I wended my way to the Colonial Market to behold the great Canadian honey trophy, and also to make the acquaintance of Mr. Jones—a name which seemed strangely familiar to me—and who had a few days previously been described in the *Pall Mall Gazette* as 'a remarkable man,'—remarkable chiefly in that he had, by 'patient experiment' and 'scientific breeding,' at last produced an insect possessing 'the good temper of the Austrian, the industry of the Italian, the long proboscis of the Syrian, and the non-stinging qualities of the Mexican bee.' (The last clause was accidentally omitted by the *Pall Mall Gazette*.) Such a remarkable man, the inventor of so remarkable an insect, was I felt, like a well-known pen, nothing less than 'a boon and a blessing to men;' and so, with eager steps, I hastened to embrace him.

Alas! how seldom does keen anticipation receive its fruition in full realisation! When I reached the trophy I perceived no one who to my wistful eye appeared to be, either physically or mentally, head and shoulders above other mortals, or looked in any way remarkable. I enquired if Mr. Jones were present. The reply I received was a natural but still an unexpected one—Mr. Jones had gone to dinner. Strange I had not thought of Mr. Jones requiring to dine, and thus to my great disappointment the meeting of two remarkable men did not take place. He must now be satisfied with having met the B.B.K.A.

The display of honey was a goodly sight, and especially the attractive manner in which it was put up, and the extensive use made of tin vessels. Surely, here we British bee-keepers may learn something. Do we not cling too closely to glass bottles? Why do not our appliance-vendors offer us self-opening tin boxes of various sizes and shapes capable of holding from two ounces up to thirty pounds? We are offered nothing less than a pound tin, and the manufacturers decline to sell, of any size, less than a quantity too large for ordinary amateurs. Whether sixpenny sections would prove saleable or not, there is little doubt in my mind that twopenny, fourpenny, and sixpenny tins would be popular. At any rate such was the conclusion I came to from what I saw at the Canadian honey counter. The sections, many of them, were imperfect and 'wept' freely, requiring careful handling on the part of the saleswomen. Nothing could have exceeded the skill and courtesy of these young ladies as honey-vendors; and it was, I must own, with some surprise that I learned that they were not allowed during the long day of twelve hours to sit down or rest themselves at all. This was so different to what I had always understood to be the marked characteristic of our Transatlantic cousins, their chivalrous bearing towards, and kind treatment of, the weaker sex, and it seemed to me rather out of harmony with the well-known benevolent sentiments of bee-keepers generally.

One buyer I heard inquiring where the permanent dépôt would be, so that he might obtain Canadian honey in the future. This question did not seem to be satisfactorily answered. He, the buyer, seemed to have been studying, and was apparently much impressed by, a broad sheet freely distributed around the trophy which described the American honey as the 'best in the world.' I felt it my duty to enlighten this worthy Briton, and to assure him that this was a natural but nevertheless a decided exaggeration on the part of our Canadian cousins, that 'the best honey in the world' was undoubtedly that obtained from the west of England, and the very *crême de la crême* from the county of Salop and that a permanent dépôt existed at ——. ('John Peel,' Mr Editor, declines a gratuitous advertisement.)

Certainly not the least interesting sight in that wondrous exhibition was the Canadian honey trophy, a visible proof of the energy and enterprise and good taste of Canadian bee-keepers, and a proof of the fertility of their virgin soil. I felt thankful that such a trophy was one erected by our own kith and kin, and not by any foreigner, that it reflected honour upon so well-known a name as that of 'Jones.' May his shadow never grow less!

Strange how history,—contemporaneous history, not only repeats but also doubles itself! In your last issue I read that Mr. Gladstone was stung by a wasp while felling a tree, and I was stung by a *drone* while reading the *Journal!* This is the sting though a feeble one—*'I purchased a swarm in a straw skep, after much "higgling" from a neighbouring cottager of the "John Peel" type.'* My friend, one word of advice; if you will adopt such an absurd *nom-de-plume* don't attempt to sting. Drones can't do it.—John Peel.

UNCAPPING MACHINE.

[666.] In your report of the conversational meeting of the B.B.K.A. on page 498, it is reported that 'Mr. Garratt drew attention to a machine which *he*, in conjunction with Mr. Hooker, had designed for uncapping combs, and exhibited an Association standard frame with the comb built out and uncapped by the instrument in question.' I can hardly think that this can be correctly reported, as this machine is entirely my own design, and I am quite sure Mr. Garratt did not wish it to be understood that it was *our joint* production.

Mr. Garratt was kind enough to furnish me with frames of comb for trial at the Bee-farm, and the comb produced was passed through the machine by him in my absence, and kindly brought up to the meeting.—JOHN M. HOOKER.

Echoes from the Hives.

Swanmore, Bishops Waltham, October 28th.—A very favourable autumn for the bees, every chance for them to come out well in the spring.

Bath, October 30th.—I never saw wasps so numerous. The hives are constantly besieged, though I have trapped bottlefuls. In a letter from Mr. Griffin, dated Freshford, near Bath, we learn that wasps have appeared in great numbers in his neighbourhood.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

L. H. CANTLE.—*A robbed stock diseased.*—The comb sent is filled with spores of Bacillus alvei. No doubt the stock dwindled through disease, and when the season for robbing arrived was unable to defend itself. The residue, after the attack had become irresistible, in all probability joined the besiegers and went off with them to adopt their home and so save themselves from utter destruction. The risk of the disease being carried into the hive or hives which made the attack is very great. You will need to be watchful in the spring or your apiary may suffer sadly, as the disease seems to be of a bad type.—F. C.

TREF EGLWYS.—1. *The Ligurian Bee.*—The Rev. G. Raynor's pamphlet entitled—*The Ligurian Queen-bee, her Introduction to Alien Stocks, and the best means of Pure Propagation*, second edition, price 3*d.*, to be obtained of Mr. Huckle, Kings Langley, will give you much of the information you require. See also numerous letters in past volumes of *B.B.J.* 2. We must refer you to our advertising columns. See also Mr. Blow's letters lately published in our columns. 3. *Surplus Queens.*—We do not quite understand your question. If you mean to ask how surplus queens can be kept alive in an alien colony for a few days and what cage should be used, we advise the 'Raynor' cage, illustrated in our columns a few weeks ago. It is a well-ascertained fact that hostile bees, intent upon the destruction of an alien queen, and while engaged in closely encasing the cage in which she is confined, will, notwithstanding, supply her plentifully with food. The cage should be placed close beside the cluster of bees, and near to sealed honey. 4. *Heddon Hive.*—We believe Mr. Neighbour is agent for the sale of Heddon's hives in this country. 5. *Feeding.*—No particular kinds of food are used for stimulating queens to lay. Any food which the bees prefer, as honey or syrup, supplied constantly in small quantity, will effect the purpose. Artificial pollen, before the natural is to be obtained from the fields, also stimulates. We never heard of 'candy strongly flavoured with ginger' being used, nor do we think it would be appreciated by the bees. 6. *Rabbets.*—In *Modern Bee-keeping* and in Mr. Cowan's *Guide Book* you will find illustrations showing the 'rabbets' or 'bearers' upon which the top bars of frames rest, and which admit of the minimum only of propolisation.

COFFIN DICK.—1. *Comb Foundation.*—Comb foundation was first introduced by a German in 1857. In 1861 an American invented a machine for making same, and in 1863 Messrs. Neighbour, who had purchased one of these American machines, manufactured and sold we believe the first British-made foundation. At these early dates it was only used in strips, in fact as late as 1875 Mr. Cheshire exhibited at the Crystal Palace his comb guide maker, consisting of a plaster of Paris cast, on which molten wax was smeared with a brush the required depth. 2. *Planting for Honey.*—It would not pay a cottager to plant his small patch of garden with honey-producing flowers for the simple production of honey, unless the plants were of other use to him; the amount of honey gathered from such a small quantity of flowers would be of little value as compared to the amount of potatoes or other food plants grown on that quantity of land. 3. *Comb or Extracted Honey.*—This entirely depends on the description of market you have for your honey crop; if comb honey sells best with you, we advise you to work for that, but, on the contrary, work for extracted. At the present time there is a much larger demand for extracted, but according to the prognostications of our Canadian friends they intend to monopolise the extracted honey trade, very kindly allowing us the privilege of producing comb. 4. *Pure Hawthorn Honey.*—We have never seen such a thing, neither should we ever expect to do so. 5. *Pollen and Honey from Hawthorn.*—Bees work the hawthorn both for pollen and honey. 6. *Experts in Scotland.*—The British Bee-keepers' Association are endeavouring to localise the affiliated Associations in order to lessen the travelling expenses of those desiring to take up experts' certificates. The requirements for a third-class certificate are a practical knowledge of bee cultivation. You would be required to drive a skep and capture the queen, manipulate a frame-hive in a workmanlike manner, and answer questions of a plain and practical nature as connected with modern bee-culture. All particulars can be obtained from Mr. J. Huckle, Kings Langley, Herts.

L. KING.—*Wax.*—Wax disagrees with some people. It is hardly affected by the digestive juices, but acts as a mechanical irritant.

BEESWING.—1. *Carbolic Acid or Creosote.*—There will be no danger in pouring it on to burning fuel in a smoker, but at the same time it is quite unnecessary to do so. 2. *Sections divided transversely.*—You cannot, of course, cut through cells of honey without bleeding, but if you give the pieces to bees they will clear away the bleeding honey first, and then, if not removed, proceed to clear away the sealed.

LEARNER.—1. Comb containing pollen may be put away for the winter; the pollen may become a little mouldy, but if distasteful to the bees they will clear it out when the combs are returned to them. 2. *Candy for Skeps.*—Yes, you may place it upon the floor-board and the bees will feed upon it. It is the best way of giving it to bees in skeps.

C. R. S.—The sample of honey was of exquisite flavour, of delicious taste, and of good consistency; its appearance was very attractive. We should say that it was clover honey with a mixture of that from English heather.

INQUISITOR.—We regret that we must come to the conclusion that your Ligurian queen has not been fertilised.

W. T. C.—There were no symptoms of dysentery or foul brood in the portions of comb forwarded. Some of the pollen-filled cells had become mildewed through damp. We should not have destroyed the combs. When dried, rub them with a soft brush, and spray with salicylic acid: when required they might then be returned to the bees. Your treatment for the prevention of the effects on the combs from damp was quite correct, but we would advise you to look well to the roof of your hive, as it is from that quarter the trouble has arisen. We have no remembrance of your previous letter, and are afraid that it has miscarried.

West Midland.—*Robbing.*—The stores in your hive have been invaded and taken possession of by an armed host, and none have been left for the support of your bees. There are no symptoms of any disease; they have simply succumbed to the effects of starvation.

The Interregnum.—I should be much obliged if any one can inform me what takes place in the hive between the hatching out of the first queen-cell and the departure of the second swarm; or whether the queen is prevented from leaving her cell until the usual nine days have elapsed after the departure of the first swarm, as it will be seen from the following facts that there is a period of three or four days from the time when the first queen-cell is mature and the departure of the second swarm. The first swarm departs soon after the sealing over of the queen-cells. Taking that it leaves the next day';—the queen-cells are sealed over on the ninth day after the deposit of the egg. Therefore the brood would be ten days old on the issue of the first swarm; and in the ordinary course of events would hatch into a queen on the sixth day after the first swarm. Thus leaving three days between the usual date a queen-cell would hatch out and the usual date of departure of the second swarm. If my dates are not right I shall be pleased to be corrected. —W. G. Cambell.

Mr. J. M. Hooker writes:—'In the report of Mr. S. Corneil's description of his crate on page 496 the following mistakes occurs: "slots" is twice used instead of "slats"—a slot is a hollow space, in fact a hole, and it would be impossible for a section to rest upon it. A slat is a narrow strip of wood upon which the sections stand or rest. In the last line but one instead of "comb" it should be *crate*. On the second line at the top of the next column instead of by *hanging* ¼-inch *straps*, it should read by *nailing* ¼-inch *strips*. "Straps" occurs again on the fifth line instead of strips.'

*** *We are in receipt of a number of communications, the appearance of which we are reluctantly obliged to postpone till our next number.*

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
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British Honey Co., Limited, 17 King William St., Strand.
Country Honey Supply, 23 Cornhill, E.C.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
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METAL ENDS.

Abbott Bros., Southall, London.
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COMB FOUNDATION.

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NOTICE.

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Editorial, Notices, &c.

LADY BEE-KEEPERS.

Some time ago we directed the attention of our readers to a lecture delivered by Mr. H. M. Jenkins, Secretary to the Royal Agricultural Society, on 'Some of the Duties of a Farmer's Wife,' in which he, fortified by statistics furnished by a lady bee-keeper whose honey always takes a foremost place at the shows at which she exhibits, endeavoured to stimulate the wives and daughters of farmers to undertake bee-keeping. He clearly proved that as one of the minor industries which could be attended to by ladies, bee-keeping was more profitable than any other employment that could be engaged in in connexion with farm-work.

Many reasons could be adduced to show that apiculture should attract the attention of ladies. To those of a limited income who have a desire to be independent of their friends or relations, it affords an opportunity of increasing both their pleasure and their means of subsistence. Bee-keeping has proved to many ladies of great benefit as a means of restoration of health. There is nothing laborious in the mode of conducting it; and it brings into action the quick observation, the fruitfulness of resources, and the tender handling, so peculiar to ladies. Distance from the close atmosphere of towns and cities, work in the open air and in the merry sunshine, the healthy employment of mind and body, will result in more robust frame, more vigorous intellect, and improved health. Many

'Lady apiculturists
Have won high fame upon the honour lists.'

We might mention Mrs. Tupper, Mrs. Harrison, of Peoria, Ill., Mrs. L. Baker, of Lansing, Michigan, among American lady bee-keepers; and Miss Gayton of Much Hadham, Mrs. Bellairs of Christchurch, and Miss Eyton of Wrockwardine, among those in our own country. Their success proves what may be achieved by tact, by energy, and by tenacity of purpose. They have discovered in bee-keeping a continual source of interest and of pleasure; they have not been discouraged by receiving a few stings, but have found that, after a time, by handling bees gently and quietly, the discomfort has been reduced to a minimum.

And bee-keeping has been undertaken by many ladies from a deep sense of duty. Placed in positions of responsibility, they have been much exercised as to the direction which should be given to the minds and the energies of the youths and the villagers by whom they are surrounded. They have with anxiety cast about their thoughts with a view of gaining some employment which would absorb the superfluous energies of the youth of the village, and which would keep them from idleness and its consequent temptations. They have discovered in bee-keeping an important means of attaining the end they have so earnestly desired and sought for. They have found that, when they have induced those in whom they are interested to engage in bee-keeping, it has proved a wholesome study, raising the mind, refining the taste, and elevating the character. Bee-keeping, if engaged in with any degree of concentration of attention, will not only enable the cottagers to resist the many insidious temptations and the seductive influences of the public-house, but will prove a blessing to their families by increasing their slender income. The study of the honey-bee will open to their minds a new and a wondrous page in the book of Nature; and when once the observing faculties have been aroused, it leads to a more expanded observation of the glories of surrounding creation and to a sense of the greatness of that Power who has created the bee with all the wondrous mechanism of its body and who has decked the fields with the beauteous flowers from which it draws the nectared sweets.

During the present year our *Journal* has given us many pleasing indications of the increasing interest taken by ladies in bee-keeping for the benefit of the cottagers in the villages in which they are placed. We have in our remembrance an interesting communication which we received from a lady in a village in Sussex, who performed the duties of local secretary in her district, and who was instrumental in obtaining purchasers for the honey raised by her villagers. More recently we directed attention to the village club commenced by Miss Eyton of Wrockwardine, and to the very valuable rules by which it was regulated. We have just received the following letter, dated from a vicarage in Essex, in which the writer shows the deep interest she feels for the cottagers in her village:—

'I live in a small rural village where some of the cottagers keep bees, and though I try to instruct them

in the modern modes of bee-keeping their honey supply has failed this year. I therefore made it known in the village that I would sell honey at 6*d.* the lb., the purchasers bringing me their jars to fill. 2 lbs. has been the most required by any one person, but I have in this way sold nearly 30 lbs. They say, "How cheap!" and buy it partly as a provision against colds and sore throats in the winter. 9*d.* is my charge for 1-lb. bottles, corked and neatly labelled "Pure Honey." For this also I have had a demand, the attractive appearance of the *bottle* making up for the extra charge. I write this to show that honey surely would meet with a ready sale if sufficiently cheap, and also if brought literally within the reach of every one.

'I have been reading the *Book on Bees*, by Rev. F. G. Jenyns, which I think most interesting, and I am going to introduce it in the schools, and also ask a lady to read at her Mothers' Meetings, which are held every week.'

We feel satisfied that with the fostering care of ladies undertaking bee-keeping from high and noble motives, a fresh impulse has been given to it, and we rest assured that they will themselves discover the best means of achieving the purpose they have in view.

GLEANINGS.

In the *American Bee Journal*, C. W. Dayton says:—Bees never carry eggs to place in queen-cells when they have a queen to lay them; also that the queen puts eggs into queen-cells of her own accord, and the bees direct the swarming; that when the bees do not swarm out the queen will destroy the cells a day or two before the young queens are ready to hatch, unless they are defended by the bees; but the bees he thinks will not defend them if there is plenty of space for storing honey in the hive. If the cells happen to be in some out-of-the-way place not frequented by the queen, they are allowed to hatch, and in this way he has several times known an old queen and a virgin queen also to accompany the first swarm.

In the *Deutsche Illustrierte Bienen Zeitung*, C. J. H. Gravenhorst describes an uncapping machine of very simple form. A framework of wood having a groove at top and bottom permits the frame of comb to be pushed along. This framework stands vertically on a board and is fixed to it. About the centre is a vertical shaft covered with sharp points and placed at such a distance from the frame that when it is revolved and the frame of comb pushed past it the uncapping is accomplished. The necessary speed is obtained by means of a large cranked wheel and cord, as in some extractors.

In the *Bulletin d'Apiculture de la Suisse Romande*, E. Bertrand says that the honey season in Switzerland has not been a good one. From all quarters come the same complaints, and that nectar was deficient in the flowers, more particularly in those of sainfoin. At Nyon, a strong colony, on scales only collected from 10th May to 11th June 37 kilos (81½ lbs.), and has since diminished in weight. Another not quite so strong or vigorous only collected 18 kilos (39½ lbs.) and decreased in weight after the 7th June. Weaker colonies only just supported themselves. The poor harvest is attributed to the absence of nectar in the flowers and to the destruction by the cold winds in May of many bees out collecting.

In the *Canadian Bee Journal*, D. A. Jones says that in examining bees in cold weather to prevent the loss of queens, blow smoke into the entrance until the bees become fully aroused and commence consuming their stores; then lift off the lid, blow a few puffs into the top of the hive, and you may commence operations, handling them very gently. After closing them up, great care should be taken in putting on the lid, as the slightest jar might cause them to ball their queen. Two or three puffs into the entrance after the lid has been put on will do no harm and insure success.

In the *American Bee Journal*, T. G. Turner says:—New hives, or anything new for the use of bee-keepers, should be encouraged, but beginners should beware lest they are driven here and there until shipwrecked in the beginning of an apicultural voyage by various recommendations of new things; far better for them to accept and act upon the advice that comes from the experience of many tried sailors on this line. Experimenters are a great blessing in apiculture as well as in any other pursuit, and yet the result of their labours should be tried and recommended by the experienced rather than by the beginner; for one is better prepared for failure than the other if such should be the result. Change is all well enough when it is made with caution, but too much change is both expensive and dangerous to our pursuit.

In *Gleanings*, Dr. C. C. Miller says: There are usually two classes of bees in the sections when opened. There are young bees that are timid and anxious to get out of the way, more especially from light. There are also old bees that are not timid, and unless frightened prompt to make attack, and when frightened eager to fill their honey sacs. We must take into account these two classes of bees and act accordingly. If we quickly take off a super, or case of honey, and remove it from the hive without giving the youngest bees time to crawl down, these are likely to be lost, more particularly as they are loth to come out to the light and do not know their way back to the hive. He has seen some clustered together for twenty-four hours or more. It is best to allow time for these young bees to go down below before the sections are removed. The old bees on being alarmed start at once to fill themselves, and no amount of smoke short of suffocation will induce them to leave the cells into which they have plunged their heads until the load is completed. He has found five minutes not too much, and this enables all the young bees to leave after the smoking, after which the sections can be removed without danger of losing any of them.

In the *Canadian Bee Journal*, W. F. Hutchinson says:—That according to experiments which he has made during the last two years, the swarm that builds its comb in the brood-nest will store the most honey in the surplus apartment and have the most brood in the brood-nest; next will come the swarm given foundation, while the swarm with empty combs will put the least honey in the super and rear the least brood. The experiments he made consisted of hiving one swarm on empty combs, the next on empty frames, and the third on foundation, continuing in this way until about forty swarms had been hived each year. At hiving he gives them a surplus apartment furnished with foundation or empty combs.

In *Gleanings*, E. Root says, while he has been watching closely other colonies, the Carniolans have received their due attention. He is compelled to say that they are poor honey-gatherers; in fact, when honey has been coming in tolerably well, they have barely supported themselves, and yet they have been given every advantage. The colony was not divided, as was the case with all the other stocks, and in consequence was the strongest colony he had, and yet small nuclei of Italians have actually more pounds of honey than this swarm. Some say they are great comb-builders, and as honey was coming in freely, he inserted two frames of foundation between two frames of brood in the Carniolan swarm; at the same time, in like manner, frames of foundation were inserted in nucleus Italian swarms. After a week, the Carniolans had scarcely done anything at the foundation, whereas the Italians had hardly allowed forty-eight hours to elapse before they had pulled theirs about all out.

JOTTINGS BY AMATEUR EXPERT.

'Mel' sapit omnia.

From the *Canadian Gazette* of the 21st ult. I gather that 'it is hoped shortly to add an interesting feature to the Ontario honey exhibit in the shape of some 300 varieties of honey plants which have arrived from that province.' Too late, I fear, to get much attention.

From the same source I also learn 'that competent judges deem the Canadian honey to be superior in texture, colour, and flavour to ordinary British honey!' Go on, Mr. Jones; there is nothing like persistency.

I further learn that the sale of English honey is largely on the increase through the British public getting a taste of Canadian honey and liking it, so that the introduction of Canadian honey is a blessing and not a curse to British bee-keepers. I fear the B. B. K. A. and the Honey Companies deserve the credit for the increased demand, but undoubtedly many have had a taste of honey this season for the first time. But I have reserved the best until last: here it is:

'It is not, indeed, the wish of the Ontario Association to work in any way other than in unison with British bee-keepers in regard to prices and other matters. The intention is to endeavour to build up a large and prosperous honey trade here, both of Canadian and British honey, while exercising the greatest care with those who handle it to prevent its adulteration.' Hear! hear! Ontario B. K. A.; we heartily reciprocate your sentiments on this point.

Let me call British bee-keepers' attention to what I deem is important. Our Canadian friends are always careful to say 'Canadian,' yet how many of us say 'American' even in the columns of the *B. B. J.* Let us distinguish between things that differ.

I see elsewhere Mr. W. N. Griffin, who has been telling us about the Minorca honey, has brought out a new waterproofing for leather, boots, shoes, &c. Has he utilised in its manufacture that hitherto useless product of the hive—propolis?

We have most of us abandoned queen-excluder zinc, but I observe the Canadians still use and recommend its use.

Our Irish friend, 'W. B.' raises the question of separators. From the appearance of sections in my possession raised by Mr. Corneil, I judge separators had been used in their production. But I have others, better than which eyes need not wish to look upon, raised by Mr. Pettitt, of Beeton, Ontario, which evidently have been raised without. Mr. Pettitt's are bulged too much for glazing, as I described in these columns recently, but are all right for the fancy boxes. Mr. Pettitt's sections are $\frac{1}{8}$ inch narrower than Mr. Corneil's, but the combs are both of equal thickness, thus showing Mr. Pettitt's bees only had one 'bee-space,' while Mr. Corneil's had two.

Oh, Erin! how I sigh when I read letters from successful bee-keepers amongst you. Take our friend 'W. B.' as a sample. What a paradise for bee-keepers the Emerald Isle must be! If the honey in her flora was only gathered, there would be scant chance for the Canadians. Will her troubles ever come to an end?

Mr. Dines uses wood screws in his section crates to tighten up the sections, the idea is good; I also have used wood screws for various purposes, but find they won't stand the damp, as both the screw and the tapped hole swell until the screw becomes immovable, and is at once wrenched off; the only remedy is a very troublesome one, char the screw and hole with fire if you insist on using wood; but a more simple method is to use coarse threaded iron screws. The 'Heddon' hive Mr. Jones has on view in the Canadian Exhibit has several screws wrenched off since the damp days have set in through this cause.

What does 'Coffin Dick' (what a name!) want to know about 'hawthorn honey?' I have seen a sample, it was a greenish hue, much resembling olive oil, dense in consistency and—out of Scotland—matchless for aroma and flavour.

I hope 'L. King' won't be alarmed, but I know a gourmand for section honey who bolted wax as well as honey, and was treated for acute congestion, whom I feel persuaded had a cake of wax lodged on his chest, which puzzled his medical adviser greatly. So, Mr. Grimshaw, beware; we don't want you to go off yet.

The latter gentleman manages to get plenty of humour as well as honey out of his bees. He does not forget to progue up 'York' continually, but I want to tell him it is a great grief to me not to be able to keep bees in my meadow, as the cows will insist on switching their tails in front of the hives in summer time, and then take to stampeding with tails erect, to my neighbours' amusement, their own discomfort, and the botheration of—AMATEUR EXPERT.

ASSOCIATIONS.

NORTH-EAST OF IRELAND BEE-KEEPERS' ASSOCIATION.

The third Annual Show of the above Association was held in the Exhibition Hall Botanic Gardens on Friday, September 24th, and was a very great success, so far as the exhibits were concerned. It is to be regretted there was not a larger attendance of the public. The day, though cloudy, kept fine throughout. We are glad to see apiculture is making decided headway in Ulster, and the North-east of Ireland B.K.A. is adding to its membership, and, we hope, its usefulness. We have several enthusiastic bee-keepers in the Association, who never think any trouble of attending the shows, lecturing, working, &c., for the advancement of the Association and humane bee-keeping, viz., Rev. H. W. Lett, M.A., Mr. Wm. Ditty, Newtonards, Mr. Sam. Hill, Banbridge, &c. The Hon. Secretaries, Messrs. Crawford and McHenry, were present during the day, and were assisted by several members of committee. The Committee added two new classes this year, viz., butter and eggs, as a further inducement to those who could combine apiculture to other branches of home industry whereby the stock-purse might be considerably replenished. Bees were very fine, and visitors took great interest in the various races with their respective heads (viz., her majesty) in each hive. Honey, both section and extracted, was particularly fine, though quantity was not so large as last year. Hives and appliances were a good show and reflected great credit on manufacturers. Mr. Lett attended in the bee-tent and gave one of his now popular lectures on the honey-bee and the rudiments of bar-frame management, which was listened to with great interest.

IRISH BEE-KEEPERS' ASSOCIATION.

A Committee Meeting was held at 35, Trinity College on Tuesday, November 2nd, at one p.m., H. Chenevix, Esq., J.P., in the chair. Present—the Rev. P. Kavanagh, Messrs. Read, Gillies, Millner, and the Hon. Secretary. The usual Association business having been transacted, and cheques signed, arrangements were made to hold a Conversational Meeting on Friday, November 19th. The Secretary was requested to send out notices to all members, inviting them to bring forward topics of general interest, and to exhibit appliances. The Secretary reported that since the honey-market was started in August, up to date the Association had sold 497 lbs. of comb honey for members, at an average price of 10*d.* per lb.

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION.

Swanmore Branch.

The annual meeting of the above branch of the Hants County Bee-keepers' Association was held on Thursday, Oct. 9th, in the School-room, Swanmore. Present: W. H. Myers, Esq. (President), in the chair, Rev. W. E. Medlicott, Mrs. Martin, Miss Martin, Miss Jessie Martin, Mr. S. Fry, Mr. C. Martin, Mr. E. Molyneux, Mr. A. Privett, Mr. G. Pay, Mr. E. Ainsley, Mr. G. Horner, Mr. F. Sparksman, Mr. W. Cobbett, Mr. H. W. West (Hon. Sec.), and others. Although not largely attended, great attention was paid to the proceedings by those present.

The Secretary read the report for the year in which the Committee stated they were glad to notice a great increase in membership, and it should, for the encouragement of others, be stated that when this club was first started two years ago, only eight members belonging to it. At the end of the first year rules were made, and a resolution come to that the club should be formed and called the 'Swanmore Bee-keepers' Society,' this being done officers and committee were chosen, and the hon. sec. was happy very soon to notice a large increase in the number of members, so much so that in February of this year the Society had grown to nearly eighty members. It was then feared that the Society having grown so large it might possibly come in antagonism to the County Association; this not being wished it was resolved at a special general meeting to affiliate the Society to the Hants and Islo of Wight Bee-keepers' Association. This was done, and the result of the year's work has been that there are now 105 members.

Early in the year a series of lectures were given in various parishes in the district by the Rev. W. E. Medlicott, Mr. C. Martin, and Mr. H. W. West (hon. sec.); these, though rather expensive, were no doubt the means of creating a great interest and stimulus in the modern way of bee-keeping and the cause of many new members joining the Society.

The Committee were sorry to have to report a small deficit, principally due to the expenditure at the excellent show held in Swanmore Park, on July 4th (the seat of the President of the Society). The show itself was a 'success,' over 6 cwt. of honey, both super and extracted, being staged, and of the very best quality in all respects.

The judges, E. H. Bellairs, Esq. (Hon. Sec. Hants and Isle of Wight Bee-keepers' Association), and the Rev. R. Parker, must have had a very arduous task in awarding the prizes.

The President, W. H. Myers, Esq., J.P., the hon. treasurer, the Rev. W. E. Medlicott, and the Hon. sec., Mr. H. W. West, were all unanimously re-elected. The following were elected as vice-presidents, Major General Dumbleton, Vice-Admiral Phillimore, Major Daubeney, the Rev. Canon Lee, the Rev. W. E. Medlicott, the Rev. C. Myers, W. H. Finder, Esq., the Rev. S. King, and R. King-Wyndham, Esq. The Committee was chosen as follows: Miss Myers, Miss Medlicott, the Rev. R. Parker, the Rev. R. Fleming, the Rev. W. H. Morley, E. H. Liddell, Esq., P. Molney, Esq., M.D., C. Hemming, Esq., M.D., Mr. C. Martin, Mr. S. Fry, Mr. G. Dowden, Mr. G. Pay, Mr. E. Ainsley, Mr. G. Horner.

Mr. C. Martin was appointed district adviser, an office which the results of his labours of the present year proved was most valuable to the Society; Mr. A. Privett, of Bishops Waltham, being appointed store-keeper, and from whom all members of the Society can buy anything necessary for bee-keeping at cost price, and carriage-free, and from whom an extractor can be had free of charge for forty-eight hours.

As an additional inducement to cottagers to join the Society the entrance-fee to *bonâ fide* cottagers was reduced to 1*s.*

A vote of thanks to the officers brought the proceedings to a close.

Correspondence.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SECTIONS.

[667.] It is to be hoped that one of the results from the interesting conversational meeting of British and Canadian bee-keepers, reported in the *B. B. J.* of October 28th, will be a death-blow to the oft-raised question as to a standard size for sections. From time to time I have raised my voice against any steps being taken in this direction, and though I was unfortunately unable to be present at the last annual general meeting of the B. B. K. A., I was glad to learn my strong protest was read on that occasion and that it assisted in causing the question to be temporarily shelved. By what means this settlement was set aside at the Royal Agricultural Show at Norwich I am at a loss to understand, and I have looked in vain for an explanation in the columns of the *B. B. J.*; certain it is, however, that the competition at that show was restricted owing to the clause defining 'one pound sections.'

But in Mr. Corneil's admirable explanation of his crate and sections, we are furnished with a fresh argument against the $4\frac{1}{4} \times 4\frac{1}{4} \times 2''$ sections. He says that *out of 800 sections shipped he had only one broken.* This he attributes to the sections being only $1\frac{1}{2}$ inch wide, and the reasonableness of his conclusion is at once apparent when we consider the larger contact of the honey-comb with the wooden walls of the section and the diminished weight of the central area. The subject of portability is of paramount importance, and if experience teaches that shallow sections travel better than deep ones, what bee-keeper having honey to sell will in future accept the risk attaching to deep sections even though there be a slight advantage in their containing a smaller percentage of wax? The old argument as to 'marketability' has lost none of its force, and from my own observations carefully made at many shows, I am more than ever impressed with the importance of the utmost diversity being allowed. Our present customers buy small quantities (usually single sections or bottles) according to their means, some 6*d.*, some 1*s.*, some 1*s.* 6*d.*, and yet some 2*s.* They are guided in their choice by appearance. On a recent occasion I caused a dozen sections of four sizes to be set out for sale by way of test; no 'pushing' was allowed. I expected the square shilling would win, but it was beaten hollow by the 1*s.* 6*d.*, although the comb was not so light or bright as the others. The size was that of $1\frac{1}{2}$ pounds, which is carefully excluded from all B. B. K. A. Shows, although largely in vogue by our Scotch neighbours. I was told, but forgot to verify when I had the pleasure of meeting him at Aberdeen this year, that Mr. Raitt, than whom we have no more enlightened or practical apiarist, uses this size entirely in his own apiary at Blairgowrie. Surely the B. B. K. A. might take a lesson from the Hants B. K. A., and word its schedules *not exceeding one pound* or 'not exceeding two pounds.'—E. H. Bellairs, *Christchurch, 1 Nov.* 1886.

QUEEN INTRODUCTION.

Hallamshire Bee-keeper *v.* Stothard and Simmins.

[668.] In his somewhat severe critique on the Rev. G. Raynor's paper on 'Queen Introduction' 'Hallamshire Bee-keeper' (645) says, 'Not one queen in a thousand

will be accepted by the bees of a queenless colony, if presented *in from four to six hours time* after its own queen has been removed.'

But Mr. G. Stothard tells us, in his letter on the same subject (651)—while patting 'Hallamshire Bee-keeper' on the back—that he has introduced *directly, i.e.* without caging, 'ninety-nine queens this season, without a single loss,' by presenting them to colonies within the *prescribed* time of '*four to six hours*' named by 'Hallamshire Bee-keeper;' that is to say, his ninety-nine native queens were removed from their colonies between 3 and 6 p.m., and the ninety-nine alien Italian queens were presented, and all accepted, between 9 and 10 p.m. the same evening. And this, he says (after somewhat fulsome praise of Mr. Simmins), is Mr. Simmins' plan. Now will Messrs. Simmins, 'Hallamshire Bee-keeper,' and Stothard—this latter gentleman holding, as I am told, a first-class expert's certificate from the B. B. K. A.—one, or all of them, kindly condescend to enlighten, with regard to this discrepancy—A BENIGHTED ESSEX BEE-KEEPER?

P.S.—'Hallamshire' says *forty-eight* hours *must* elapse between the removal of one queen and the presentation of the other, and then *ten thousand aliens* will be received without a *single loss*. What am I to do, what am I to believe, when doctors thus disagree? I want to Italianise my apiary next season, by introducing imported queens without loss. *Di mihi sint faciles*, for 'vain is the help of man!'

QUEEN INTRODUCTION.

[669.] I have been much interested in the controversy about queen-introduction, which has just lately been appearing in your *Journal*, and if my experience is worth anything, here it is.

Having two stocks that I wished to experiment upon, one with a virgin queen which had been hatched late in the season and had not mated, the other an exceedingly vicious lot of hybrids, I decided to introduce a fresh queen to each, and seeing on page 307, letter 426, the law of the 'Hallamshire Bee-keeper,' which is laid down in such definite words, I determined to give it a trial. I therefore removed the virgin queen, and as there was neither brood nor eggs, another queen would be accepted any time after forty-eight hours. I procured one about three weeks after, and going to the hive at night with a lantern, dropped her in at the feed-hole. The queen from the vicious lot was also removed, the bees during the operation being anything but gentle; and as there was a small patch of eggs on one comb, I examined ten days after and destroyed six queen-cells, which were sealed over; three days after that I dropped a queen in at the feed-hole at evening, and had the satisfaction of hearing the peculiar hum attendant upon the direct introduction of a fertile queen to a colony that has been rendered hopelessly queenless. This occurred a month ago, and the other day, on looking my colonies over preparatory to packing up for winter, I saw the queens in both these stocks as fresh and lively as ever. This mode of direct introduction seems really so simple and certain that I feel sure we have at last succeeded in finding the 'balm in Gilead,' and therefore, I say, let us 'incline our hearts to keep this law.'—NORTH DERBYSHIRE.

THE INTERREGNUM.

[670.] In answer to 'W. J. Campbell,' page 517, it has long been considered by old-fashioned bee-keepers that a cast or second swarm invariably emerges on the eighth or ninth day after the departure of the first swarm; truly, this is often the case with black bees, as we find that they mostly swarm after the capping over of at least one queen-cell, sometimes more, weather having a great influence over such movements; but with foreign varieties these arrangements are seldom carried out; in fact, swarms frequently issue before any attempt at raising queen-cells is made, hence there can be no invariable rule laid down as to the time of issue of a cast or second swarm. We will take, for the sake of exemplification, the conditions of a hive as alluded to by 'W. J. C.', that the queen is hatched three or four days before the cast issues. A queen never leaves the hive directly she leaves the cell, but waits for a period, generally, of five days, before trusting herself outside; this leads one to suppose—which, without doubt, is the case—that before such a time she is not in a sufficiently developed condition to meet the drones; when she does come forth for that purpose, a quantity of the workers follow her, and so constitute a cast. The above also is the reason why we so frequently find a number of virgin queens in a single second swarm.—W. B. WEBSTER.

A PROTEST.

OBSERVATIONS PAST AND PRESENT.

[671.] It is regrettable that those who differ cannot rely on language free from *stings*. Why, for instance, does 'Amateur Expert,' in the *Journal* of October 21st, dress up his observations by sneering at our Colonial friend's 'Yankee wit,' &c. Not dogmatic assertions, but calm discussion and practical tests, are the requisites for deciding the advantages, if any, of the points of difference between the two systems of management. Comparatively speaking, I do not think that either system is the best; in some minor details of management it is so on either side—much in the same way as there are between individual bee-keepers in this country; but that each will receive mutual benefit from the most pleasant interchange of thoughts, none I think but the most conceited can doubt.

Our Canadian brethren have an undoubted climatic advantage, as well as a more abundant bee flora. Why should half-sections become the rage with us? There are more reasons than one why they should have a trial—I trust thinner sections of other sizes also—by our advanced and reliable bee-keepers. It has been a common cry of the difficulty of disposing of our surplus honey at a remunerative price, and if the same surface of comb honey can be shown with from four to six ounces less in weight, bee-keepers will have a better chance of securing the nimble sixpence. Any alteration to pound sections should be in height only; keep to $4\frac{1}{4}$-inch wide, and most, if not all, racks generally used can be adopted for these trial sections. It follows then the best sizes to adopt differing from our usual pound sections will be $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$ and $4\frac{1}{4} \times 5\frac{1}{4}$ or $5\frac{1}{2} \times 1\frac{1}{2}$, the last to give the oblong shape preferred by some, or $4\frac{1}{4} \times 6\frac{1}{4} \times 1\frac{1}{8}$, all these sizes can be used in most of the racks in ordinary use, as also can $4\frac{1}{4} \times 3\frac{1}{2} \times 1\frac{1}{2}$. No loss whatever can arise in giving these sizes a trial, unless indeed it may be in the renewal of separators, which would be of small amount only.

That stocks of equal strength will nearly as quickly, and often quite so, fill the 2-lb. as the 1-lb. I think there can be no manner of doubt; as I well remember, several years back when large supers were used, my experience repeatedly determined the fact that supers of 6 inches deep were as quickly filled as those of 4 inches only; and from this fact I had a prejudice against the $4\frac{1}{4}$ sections, together with the separators, simply because the bees could not cluster thickly for secreting the wax.

I think there is room for improvement in separators, they should be stamped out somewhat like the excluder, but with openings from a $\frac{1}{4}$-inch to $\frac{5}{16}$-inch wide.

Doubtless most makers could supply these altered sizes of trial sections, not of necessity the American folding, but the ordinary—so called—dovetailed sections, without adding any expense to their plant. I think these are

points worthy of immediate discussion, to arrive at a somewhat definite conclusion as to the best sizes to give a trial next season, and previous to the Sub-Committee preparing the amended prize list for 1887.

I also think that having all four sides of sections slotted, giving a bee passage throughout each row a decided improvement, for which we have to thank our Canadian friends.—JAMES LEE.

JUDGING AT SHOWS.

[672.] My remarks (No. 640) were not intended as grumbling, for at the decision of judges I have no reason to demur, as my list of awards plainly shows. And though the awards at some Shows have been reversed at others, there is no doubt the awards have been given conscientiously; which, nevertheless, shows the want of some recognised system of judging, for the guidance more particularly of those who adjudicate at small local Shows. To advocate this was my only aim, and from the remarks which I made with the sole intention of showing its necessity I have nothing to retract.

Respecting my double exhibit (which I am happy to say is my only one) I unfortunately followed your correspondent's (No. 658) example, but in a rather modified way. I made two entries in one class *alone*, your correspondent with a co-exhibitor from same apiary entered each separately in all available classes.

As to any animadversions from 'Bee-hive' they would, had they been given, shown more honesty of purpose if their author had not hidden under a 'Straw Skep.'—ELIHU CLOWES, *Brackbrook, October 29th.*

EXPERIENCES.

[673.] Last December, while on a visit in Somersetshire, a friend offered me a hive of honey, bees, and all, if I liked to take them home with me. I had often a fancy for keeping bees, so this decided me, and I accepted. On the morning of my departure, my friend gave me the skep, tied up in canvas, and charged me to keep it steady—rather a difficult job, seeing I had to drive nine miles over a very rough road. Suffice it to say, although I had to change five times, and kept possession of my charge all the time, I arrived home with the bees all alive, as I was pleased to see them out, and very busy the next morning. They weighed, skep and all, 23 lbs., which we thought quite sufficient for wintering from them. But on examining them in March, we found all dead, leaving a nice skep of empty cells. I now thought of giving it up as a bad job. I wrote my friend, and his reply was, 'I will send you the first swarm I have. Keep the skep as it is to put them in.'

In the meantime a local amateur friend persuaded me to have a bar-framed hive. I got one, through him, all fitted up. But, thinking I might daily have to visit Somerset again, I asked that the swarm promised might be detained; but as time went on, and I did not go, it caused a delay till 30th June, when my friend sent off a swarm, but on arrival they were all suffocated, having been tied in a double sheet round the skep! Second misfortune. *Nil desperandum.* On the 17th July I again returned home from Somerset, this time with a late, but first, swarm in a box, and got them home safely, my friend here transferring them for me the next morning into four frames in the bar hive, and instructed me to feed with syrup at once, which I continued for a week, when we were satisfied the queen was steadily at her work. First success.

On 17th August I had my first experience in manipulating, viz., in assisting my neighbour to take off supers, and also a few sections. We had rather a rough time of it, as the frames had not been left securely in their places, and consequently the combs were of very irregular thickness, and fastened to the sides and ends, causing much use of the knife and irritation to the natives. However, I escaped very well (I wore veil and gloves), but two wanderers lost themselves in the vicinity of the calf of my leg, where I soon had knowledge of their arrival. My leg got much inflamed and stiff for three days.

On 2nd September I accompanied same neighbour six miles off to a farm, to drive two lots of condemned bees for a man, who drove us there in his trap. We were shown four old skeps, two of which the old lady wished us to leave. I felt rather shaky when I saw the two she wished driven, as they looked anything but safe, being in a very dilapidated condition. However, we succeeded in driving the two without a single sting; we amalgamated them into one skep, and drove off. They were put into bar-frame hive on four frames next morning, and I believe are doing well. Second success! Again, on 6th September, a gentleman kindly gave me four skeps of condemned bees. My former neighbour went with me again; we arrived at 5.30 p.m., and commenced at once. Well, we drove the four without any difficulty, putting them into two empty skeps, tied each one up in a table-cloth, and slung them on a pole; we had to carry them one and a half miles, but got home all right. It was too dark then to do anything that night, so we put them on stands, unfastened the cloths, and left them. The next morning I thought I would make bold enough to try without assistance, feeling confident—it is astonishing how soon you gain confidence with bees—after my little experiences, that I could do now single-handed. I first smoked my bees in bar-framed hive, then separated the frames. I then lifted the heaviest of my two lots of condemned bees, and, with two bangs on the skep—loosely balancing it in my two hands—discharged the whole into the bar-frame hive; they, however, fell in such a large lump that I had to force them down with my hands. I packed them up and put on syrup at once.

Now for the other lot; these I wanted to put into the skep of comb, in which my first lot died. I inverted my condemned bees in a pail, placing the other over (mouth to mouth) and began to drive; but after twenty minutes' work no effect. Having no more time to spare I left them as they were till the evening, when, at 5 p.m., I again looked at them; I was surprised to see them hanging in a mass from the upper skep, not one having gone up. At first I thought of getting assistance, but again of waiting patiently till another day. I forgot to say I had previously converted the top of my skep into a feeding-stage, by opening it and screwing on a board one foot square, with a hole in centre three inches in diameter, to accommodate feeder. Putting on syrup feeder I again left them till 7 a.m. next day, when I found some had been up, as half the syrup was gone; but there still remained a lump as large as a bowler hat hanging. I was perplexed, but all at once thought of water. I lifted them as they were into a large pan, and gradually filled it up with water to about one inch of the top skep; after waiting five minutes I lifted, and, to my joy, found they had all gone up—not more than a dozen were on the water. I placed them on the stand and all went on well. I have given each lot 16 lbs. of syrup, and 3½ lbs. of dry sugar I put at the back of the frames, in bar-hive. A week after I stopped feeding, viz., 1st October, I placed 4 lbs. of toffy on the top of each, then the carpet, and packed up with straw bottle envelopes. The skep I thatched with same material.

I hope to find all secure by the spring. Will you kindly say if I am likely to succeed?—C. PERRY, *Ely Road, Llandaff.*

[You have had in a short time a varied experience, and have acquitted yourself well. We have confidence in your future.—ED.]

CAMPHOR AS A CURE OF FOUL BROOD.

[674.] Will some of the numerous readers of the *Bee Journal* give their experience of the use of camphor as a

cure or preventative of foul brood? I, unfortunately, have had occasion to try it, and other so-called remedies. Camphor has been a total failure with me as a cure, but I am not certain that it may not act as a preventative of foul brood in hives that have not got it. On the 9th of May last I found that I had got foul brood in several hives. In my spring examination, in March, I was in hopes my hives were clear of it, as I had had a touch of it last year in two hives, and after trying the Cheshire Cure upon them until they were a mass of corruption, having a spare hive, I decided to turn them out and put them upon foundation, and give them a fresh start. The first lot did not like their new home and joined with the other lot, and had to come out again. They were then put into a clean hive, and the brood they raised afterwards was as clean as possible, so that I came to the conclusion that it was useless to use anything in my syrup in feeding up in the autumn as I was using carbolic solution instead of smoke for manipulations.

My attention was first called to it this year in a hive of hybrids that had been working harder than any of the others in the early spring, getting weaker instead of stronger. I was not long in finding out the cause of it to be foul brood. As I was feeding all my hives, sixteen with syrup and three with candy, I at once put salicylic-acid solution in the syrup and camphor in all the hives, not in bags, as recommended by you, Mr. Editor, but loose in hives, a couple of large pieces that took two or three weeks to dissolve and the bees could not move, and then the small pieces I put down between the bars and the bees brought some of them out at the mouth of the hive. Now, I think if camphor is any use as a cure of foul brood, it ought to have acted in my case, as to get these small pieces out of the hive they would have to move them along upon the floor-board, so that it ought to have penetrated the whole of the hive.

Two out of the three of the hives that were being fed with candy gradually died out, there being camphor and food in the hive all the time, the other one being a weakly lot. I took the candy away and gave them some of the syrup with salicylic acid solution in it, and they gradually got stronger, and the last time I examined them the brood was as clean as possible, and I think they will winter without any feeding.

Four of my other hives that I was feeding up to the first week in June with syrup medicated with salicylic acid solution and camphor in the hives gradually got worse. I took some combs out of the foul-broody hives that did not contain brood, most of them were sheets of foundation barely worked out, and after giving them a good fumigation with brimstone, I put them into a clean hive, and shook the bees off from the old combs on to these, at the same time giving them plenty of camphor in the hive. They at once started breeding, and the first lot of brood sealed over was fairly clean, but it gradually got foul again. Some might say that the queen was in fault, but I am certain that she was not, as she was a young queen put into this hive last autumn, and the apiary where she came from has not got the slightest trace of foul brood. I shall call this hive No. 1. Nos. 2 and 3 I served the same, with the like result. They all three got turned out during the hot weather we had at the end of August by the other bees robbing them. No. 4 not having any more empty combs, I disinfected by fumigation of brimstone one of the hives that the other bees had been turned out of, and gave them half sheets of foundation with plenty of camphor. I put the bees into the hive to take their chance. I suppose the disinfectant was too strong for them, as they nearly all came out of the hive and clustered on the outside, but during the following night they went inside again, and the next day they were at work again. This was about the middle of June. Now, judge of my surprise when looking into this hive some time in July to find the brood as clean as ever I see any, and young bees hatching out by hundreds when the other three were getting weaker every day, and this hive when turned out was in the worst condition, as it was the last to be operated on. It is now in very good condition for wintering with plenty of young bees.

So that it appears to me if you want to get rid of foul brood you had better sacrifice your old combs and the brood in them, and put your bees into clean hives, and give them a fresh start, and feed them gently with syrup containing salicylic acid solution. I could not get mine to take phenol in any shape or way. But they got a good sprinkling of carbolic both inside and outside of the hives. I should like to see Mr. J. M. Hooker give us his experience of foul brood, as I believe he has been through the fire and come out clean. And then another thing as regards foul brood: how is it that straw skeps do not get it, the same as bar-frame hives do? I could mention several instances of their missing it when situated almost close to an affected apiary. I will quote one. A certain cottage bee-keeper who has not learnt the modern ways, but keeps them in straw skeps, and puts them over the brimstone-pit when he wants their honey, who has lived for several years within half a mile of a bar-frame apiary that is stinking of foul brood, and yet he don't get it. This spring he had three stocks; they increased (naturally) to nine. As I happened to call at his house this autumn the day after he had brimstoned them, he asked me if I would like a piece of honey, not knowing that I was a bee-keeper. I thanked him, and said I should like to have a look at it. And judge of my surprise to find that there was not the least trace of foul brood in the combs, and this was early in August, when there would be no difficulty in seeing it. After I had examined it I told him that I was a bee-keeper, and thanked him all the same for his offer of the honey, which I declined. This man always gets some of the earliest swarms in this district, and yet he never feeds them.

The only case of foul brood that I have seen in a straw skep was shown to me by Mr. Baldwin, the expert, when manipulating at a show several years ago. —Man of Kent.

CARBOLIC-ACID FUMIGATOR.

[675.] The expectations of the inventor of the carbolic fumigator, I can assure 'John Peel,' were not in the direction indicated by his letter (654), as, like all other inventions, we frequently find something that requires a little improvement or adjustment at first. This was my experience, for, after sending away a dozen or so, I saw that a more effectual way of fastening the chamber to the bellows was necessary. This was at once done, and the greater portion of those issued called in and altered; which I shall have great pleasure in doing with his. I have found also that a slight escape of acid takes place from the back when the sponge is improperly filled,—you cannot get every one to do things as you do it yourself. This in the next issue will be obviated very effectually, after which I am quite sure there will be no cause to find a fault of any description. The many hundreds of bee-keepers who have seen me use it both in the bee-tent and apiary during the past season, cannot say that it fails either in big or little manipulation. I can do anything with any bees, and at any time, when a smoker would be necessary.—W. B. Webster.

UNITING BEES.

[676.] Will you kindly allow me a small space to state my experience in uniting bees? As I have found it to answer so well I should like my brother bee-keepers to know it as well as myself. About July I cut some lamb mint and dry it and fold it with cotton rags or paper. When uniting smoke at entrance, then on top of

them bundle the driven bees in, and smoke them and cover up. I have added two driven lots to each of my five boxes. I saw no fighting whatever.—G. G., *South Cornwall.*

BUMPING.

[677.] Friend 'Drone' must have misconstrued the Editor's directions on the above subject. In his letter (656) he tells us that he bumped the *edge* of the skep *three* times on the bricks sharply. Well, if he did this, no wonder there appeared a 'smash' when he *turned it up!* In bumping a skep properly there is no occasion to turn it up, as it is already in that position, for which position refer to this *Journal*, July 15th, page 314. I have bumped considerably over one hundred skeps this season without a single mishap; it is no use doing it if there are any sticks across the hive, these must first be pulled out with a pair of pincers, twisting the stick round whilst removing it. One sharp bump is generally sufficient. If you wish to save a particular queen don't bump that hive until you have driven her out; I always make this an exception, as on one or two occasions I have afterwards found her damaged. I fix the entrances of all the hives with a tuft of grass first, and then give the one to be operated upon a few puffs with the fumigator, replace the grass and tap the hive with your hands; this is specially necessary late in the season or on cold days, as the bees are then very torpid and require a little 'waking up' to bring them to a sense of their condition. If all this is done as described 'Drone' will never make such a rash promise as he does in his last paragraph but one of his letter. Where is 'Drone's' market? If I sold sections (good) at 6½*d.* the buyers would have to go without 'fancy boxes;' if they wanted extracted honey at 4½*d.* they would have to wrap it up in a piece of paper before I would provide bottles. Just 'look around' and try for better customers, such are easily found.—W. B. Webster.

BUMPING.

[678.] *Poor* 'Drone!' but, my dear friend, what a hurry you were in! I too have bumped for the first time this year, and it will certainly not be the last. Driving is all very well on a nice sunshiny day, but in cold or cloudy weather bumping is decidedly quicker and easier.

'Drone's' mistake appears to me to have been twofold. First he should have waited until next day, instead of trying the bumping process at such an absurdly late hour as 7 p.m., especially if, as I suspect, he wanted to transfer some of the combs; and, second, he should have 'turned up' the skep before bumping and bumped the *top* edge of the skep against the bricks, not the bottom edge, as he appears to have done.

I have found the combs break off about three quarter way up, but as the bees nearly always run upwards on being inverted no damage is done beyond the loss of a small quantity of honey.

With regard to carbolic acid fumigation I have used nothing this year but a Raitt fumigator in a Bingham smoker, the acid being in a crude form, and occasionally with fierce bees three to six drops of liquid ammonia added, and have never found it fail. I have two stocks of my own, and have done a lot of driving and bumping for skeppists about here, many of the hives being Ligurio-English hybrids.

Will you allow me to protest against what seems to me the utter folly of exposing more of one's person than is unavoidable to the stings of bees? Bare hands one must have for neat manipulation, but to leave one's arms exposed as George A. Manning did seems a tempting of providence. I *always*, even with the quietest bees, use a veil and two strong indiarubber bands round my coat-cuffs. This prevents bees getting under the sleeves.

I fear my letter is already too long, but I *should* like to mention a hive I have which is very cheap, It costs complete, 7*s.*; and consists of a single walled hive, front and back of 1-inch wood, and sides of ⅜ or ¼ inch match boarding continued in front to form a porch, eight Abbott's broad-shouldered frames and two dummies, and zinc roof with ample depth for a feeder or crate of sections.

The only fault I have to find with it is that the dummies being very slight are apt to warp with the damp and heat of the hive, but an extra sixpence would remedy this.—Trevor Saynor.

ANOTHER EXPERIENCE OF BUMPING.

[679.] 'Drone' was, as all drones are, idle not to have learned how to bump a skep of bees after the instructions that have been given in the *B. B. J.* from time to time. This spring I bumped over seventy stocks in skeps and boxes of all sorts and sizes, and never had a mishap. Now 'Drone' says, 'I tried the bumping process by striking the *edge* of the skep on the bricks *three* times sharply.' 'Drone' says he shall not easily forget what met his gaze. I should say not more than was to be expected. 'Drone' made a sad blunder. Let him try again and give the hive a sharp bump on one side of the crown, and not three on the edge, and let him have more experience before coming to the conclusion he has arrived at. I was pleased to see Henry Dobbie (649) give a better account of bumping. — A Lover of Bumping.

BUMPING *versus* DRIVING.

[680.] As a constant reader of the *B. B. J.*, I gave some time back an article on the above and giving instructions how to proceed, I have wondered not to have seen 'Someone's' experience set forth ere now; and not having seen this I venture to relate my own. I had two skeps that I had determined to 'bump,' to try it. One I had worked sections off, the other was a swarm put in in June. I took this one first and went to work as follows: After smoking a little to drive what bees were on the floor-board up into the hive, I turned it up and covered it with a clod soaked in carbolic solution, gave it the necessary 'bump' on the ground (to the left) and at once proceeded to take out the right-hand comb, brushing the bees back with a large turkey feather, my partner being at hand to give a 'quiff' of smoke if required, as I cleared the bees off. I put the combs into a pan and kept them covered with a cloth. The first skep took about six minutes. The next skep had sticks through it, and we were obliged to cut it in two before we could get them out. After repeating No. I performance we put the skeps back on their old stands, and in about an hour found the bees nicely clustered and easily transferred them to a bar-frame hive. The time occupied in the two bumpings being about twenty minutes. This is a decided gain over the driving process, especially as it was done on rather a chilly evening, but I consider the disadvantages more than balance the gain in time. Some of them are—1st. The loss of bees—as directly the combs are broken the mass of bees get their wings clogged with honey, flutter up, and stumble over the outside of the skep, only to crawl away and die, and some get injured in brushing back into the hive, and some by the combs squeezing them. 2nd. The difficulty there would be in getting out the combs where sticks are put through the hives. I was rather amused at your former correspondent advocating a small saw to cut them, he should try it; I think a pair of pruning shears would be preferable. 3rd. You would get stung more by bumping strong lots than by driving, although I came off stingless. I could not call mine strong. 4th. The loss of honey, occasioned by combs

breaking an inch or two from the top, or breaking in two as you lift them out.

Your 'F. C.'s' penny gridiron again sounding all right in theory, but not working in practice. I should like to see the experience of others who have tried the process, and who may, perhaps, be more competent to judge of its merits than—A Newbury Bee-keeper.

MORE LIGHT.

[681.] Although 'Sedens in Antro,' when asking for information, states that he is prepared to accept terms of reproach calmly, I regret that my remark respecting his expectation that regular bee-keepers—of whom I do not consider myself one, keeping, as I do, only four stocks—would make experiments for his benefit, should have stung him so badly as to rouse his admittedly calm temper, and make him consider as an unkindness that which was not intended as such; and while thus roused cause him to make what I thought an Englishman considered could only be made by a poor Paddy, namely, a 'bull,' when he says he asked no one, *least* of all your humble servant, to make experiments for him. Now I, as an unenlightened Irishman, require more light to enable me to see that there can be less than no one, and if no comparative much less a superlative degree.

I hope that, in one respect at all events, I am like the bee, and having stung your correspondent once, he will not be stung a second time by me, but will take a hint in that calm manner in which he said he would; and that we may yet meet and be good friends, and glean something from each other's experiences; for although from want of time, and not through selfishness, my experiments in bee-keeping must necessarily be few, I shall at all times be willing to give my little experiences for what they may be worth to all bee-keepers to whom they may be of any use, including 'Sedens in Antro,' as I, like him, have not appealed for advice in bee-keeping to any one in vain; and even if I had, it would not prevent me from giving any information in my power for the advancement of bee-keeping.—Boz.

MANIPULATING TENT.

[682.] The following explanation, in addition to that given in my former communication, will, I hope, make it clear how my Manipulating Tent is constructed.

The tent is covered all round and at the top with wall canvas, which lets in quite enough light, and protects the hive from winds and light rains (I should not attempt to open a hive in a pelting shower).

In construction it is as light as possible; the frame is made of 1½ inch stuff, notched together, and secured with $\frac{5}{16}$ bolts at the corners, and from corner to corner, both top and sides, is stretched a cord which keeps all square; there are spikes projecting three or four inches at the bottom of each upright, which add stability to the tent in windy weather.

This tent I also find very useful to place over a hive if I discover robbing going on.—C. Kingsford.

SEPARATORS IN CANADA.

[683.] In your issue of November 4th, Mr. W. B. Patrickswell, County Limerick, says:—'Perhaps Mr. McKnight or some bee-keeping friend would kindly say if in Canada separators are in general use, and whether those beautiful and evenly finished sections exhibited at the Colinderies were produced with or without their aid.' Permit me to say in reply that separators *are* in general use in Canada, and that at least nine-tenths of the comb honey exhibited by us at the 'Colonial' were taken *without* separators. Satisfactorily finished sections may be obtained by a skilful manipulator when favoured with a good location and a rapid honey flow. In the absence of these, or any of them, it is best to use separators.—R. McKnight, *London, November 7th*, 1886.

DISTANCE BETWEEN CROWN-BOARD AND FRAMES—RESUSCITATION OF BEES.

[684.] In 'Useful Hints' (see *Journal*, October 21) reference is made to the Woodbury hive having an inch space between the crown-board and the frames. Such a statement is erroneous, and if allowed to pass uncontradicted, would, I humbly submit in connexion with the name of Mr. Woodbury, be lamentable. I obtained a hive from Mr. Woodbury in 1867; it had been several times, both before this date, and subsequently, figured and fully described in the *Journal of Horticulture* and the 'Devonshire Bee-keeper,'—Mr. Woodbury's *nom-de-plume*—was most particular on the point of distances; the frames should hang from the inside of hives, and this was $\frac{3}{8}$ inch between crown-board and tops of frames, the same between the ends of frames and hive sides, also same at bottom. From the description given in the above paper, many hives were made by people who never saw a Woodbury, and I had many times ocular proof that these so-called Woodbury hives were as badly, and in many cases worse, constructed than those you refer to.

An interesting incident occurred with me in connexion with the discussion on the exposure of bees to severe cold. In the autumn of 1868 I purchased a stock of Ligurians, a young bee-keeping friend was anxious to see specimens of the new race and begged me to save him a few dead ones; as the winter was so advanced, it was thought no opportunity would occur of seeing them on flight. However on a clear, bright, sunny day towards the latter part of November the bees took a flight, the day was followed by a severe rimy frost at night, and about nine the next morning I went to the hive to pick up a few straggling bees, thawing had not commenced and the bees I found had dropped on groundsell and had been exposed 16 or 18 hours to the biting cold; they were taken to the kitchen and put in a saucer, I could scarcely believe my eyes when, in two or three hours, I went into the room and found every bee alive.—James Lee.

COMB FOUNDATION.

[685.] Living always under the impression that to a Scotchman was due the honour of being the 'first maker of comb foundation in Great Britain,' and that person the famous 'Lanarkshire Bee-keeper,' you can easily imagine the sad disappointment I got in reading your reply to 'Coffin Dick' in last issue of *B.B.J.* Thinking you must have made a mistake, I took the trouble of carefully investigating the matter, with the result that I find you are quite correct. The German you refer to was Mr. Methring, in whose brain the embryo idea of comb foundation first took root, and later by Mr. Wagner. It is somewhat misleading to the public in general for any one to claim honours they are not justly entitled to, and from the very fact that Messrs. Neighbour, who purchased an American machine in 1863, and made the first British made foundation, and Mr. Cheshire in 1875 exhibited his comb guide maker, consisting of a plaster of Paris cast, on which molten wax was smeared with a brush the required depth. If any other appliances had been in use earlier than the above dates, no doubt we would have heard about them. —John Douglas McNally, *Springburn, Glasgow.*

THE TOAD ENEMY.

[686.] I have discovered a very destructive enemy to the industrious little bee. I dare say there are some bee-keepers well acquainted with this enemy; but I am

sure there are a good many that would like to know about it. For the past seven years I have studied bees and bee-keeping a good deal, and also have much pleasure in stating that during that time I have been very successful.

The toad is very useful in a garden where there are no bees, as the toad feeds upon many insects or vermin, such as slugs, earwigs, grubs, caterpillar, &c. I used to introduce as many toads into my garden as possible, so that I might have a perfect plant or flower. The toad generally hides himself a little under the earth, so as to be kept moist. I soon discovered that Mr. Toad placed himself under the bee-hive, concealing himself about two inches under the earth, so when the little bees returned home laden with pollen or honey they frequently fell down beneath the hive, when Mr. Toad, watching his opportunity, pops out from his hiding-place and devours the poor little bee. After he has eaten this one he returns to his hiding-place, and still keeps watching the opportunity of catching others. The toad will eat from twenty to thirty bees per day. When a bee-keeper has such an enemy attacking his bees, it must soon weaken the hives so that there is great danger of losing them during the winter or early spring. The bee-keeper, finding on examining them such a small quantity of bees inside, comes to the conclusion that he has a bad queen. The toad will also attack the bees at night when the hives are close to the ground, as the toad, by some means or another, stands upon its hind feet, perfectly upright, and commences to open and shut its mouth, when the little bees, becoming alarmed, run to the tip of the board and fall direct into the toad's mouth, when the toad commences the same thing as I have already stated above. The best time to look for the toad is from June to September, these being the principal months of their attack. After the toad was discovered to attack bees, I caught him, cut off one of his toes, and threw him about a hundred yards away from my apiary; when, on going to the same hive the following night, there sat Mr. Toad, busy catching more bees; this time he lost his life.

There is also another enemy I must inform you of, very dangerous to the queens when they are taking their wedding-flight—the swallow. It will be found that there are only a certain class of swallows that attack bees. In 1883 I noticed the swallows darting about my apiary. I was determined to watch their movements, when I distinctly saw one of them catch a bee and fly direct into a large lodge, adjoining my apiary. I then went to the lodge, and to my great surprise I saw a nest containing five young ones, and on examining the ground at the bottom, I found a large piece of zinc, and to my astonishment I saw, I should think, about 3000 dead bees. I at once set to and caught the two old ones, and killed the young ones.—ARTHUR WALTON, *Apiaries, Orpington.*

Echoes from the Hives.

Chippenham, Wilts, October 30th.—The yield of honey in this district has been this year considerably below the average, although the season has been one of the finest on record. At the end of the honey season the completed sections were very few, and the unfinished ones very numerous. The latter will form a grand collection with which to begin the honey season of next year. The autumn has been very favourable for the bees working, and I never remember seeing such a quantity of autumn bloom, the blossom from the ivy being largely productive of honey; so that the bees have, I believe, gone into winter quarters in a much better state than we were led to expect some months ago. May they remain undisturbed from the hands of the busy manipulator.—W. A. WARRILOW.

Bishops Stortford, November 2nd.—I have done very well with my bees this year. I had four stocks at the commencement of the year, two of which swarmed, but they have been driven, so that I now have my original number, four, and I have taken 180 lbs. in sections and run honey, all of which I have now sold in various ways, except about a dozen pounds.—C.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

E. L.—1. *Bees and Sedums.*—It is a common occurrence at the end of the summer to find bees, butterflies, sunflies, &c., in a more or less stupified condition, feasting on the nectar secreted by autumnal flowers with such eagerness that in the case of butterflies any one may with little trouble capture them whilst sipping the honey contained in the flowers. Humble bees are still more affected, as the only movement they are capable of in the way of protection is to lazily raise their legs, and losing their foothold, fall to the ground, and die either from exposure or become a prey to nocturnal beetles, &c. The sedum to which the cutting refers is not the only plant that produces this somniferous effect on insects. Autumn or Michaelmas daisies, single dahlias, annual and perennial sunflowers, &c., are also guilty of secreting nectar (if not really intoxicating) capable of producing an analogous condition on the actions of insects. Fortunately, however, the honey bees are not affected to such an extent, and are but little influenced with this somniferous nectar. 2. *Winter Passages.*—The fact of your never having required winter passages in your hives is no argument against the advisability of cutting them. Many a stock has been preserved during the winter by adhering to the advice of experienced bee-keepers, while in the spring we are continually hearing of loss of stocks through want of attention in this particular.

A. B.—*Queenless Stock.*—It is not too late to introduce queen if you can get one. If you cannot get one, you had better unite, presuming the bees are in a bar-frame hive. Open both the queenless stock and that to which you wish to unite them. Open out the combs of the latter and place those of the former which are covered with bees alternately with them. Remove the remaining combs. Disturb the bees as little as possible during the operation. To unite two stocks in skeps, drive both and mix them, and let them run into whichever skep is best provided with stores.

A. E. BOOKER-HILL.—*Wax.*—Your sample of wax marked A is very similar to what is usually considered a good show sample, such a sample as could be produced from section combs that had been built while the bees were working sainfoin. If they were working white clover it would probably be whiter. Sample marked B is from old brood combs we judge, or has been rendered by the application of *dry heat* instead of *hot water.* Such samples may be bleached, and be quite as good for ordinary purposes of trade, and far more eyeable; but to be given back to the bees we much prefer it unbleached, and do not object to the colour, however dark. Bleached and adulterated wax are a fertile source of unprofitableness to bee-keepers. Dealers and purifiers of beeswax blend, and bleach, and colour, and we may add *scent*—dentist's wax for example—to suit their market, and we see no very great objection, *providing it is not to be given back to bees in the form of foundation.* We hope to give a few jottings on wax in a future number.

G. E. A.—The name of enclosed flower is *Nepeta mussini.*

J. H. D.—The plan which you propose will answer, and will not baffle the bees at all. If, however, you pack the bees at the back of the hive with a divider in front, forming an ante-chamber, no light can penetrate to the bees, and no other protection is needed.

DIST. HON. SEC.—*Brood dead in Combs of every Stock in the Apiary.*—This case is the most puzzling I have as yet met. It is undoubtedly *not* foul brood. The dead larvæ

contain no bacilli, and the fat cells are intact, two perfectly conclusive points. Poison has constantly been given as the cause in obscure cases by those who have not studied bee disease. This may be a case of poisoning; if so, it is the first brought to my notice. That all the bees have received the same syrup, and that all have taken it slowly, seems to favour the idea. Has the syrup been kept in a zinc can, or in a galvanised-iron one? If so, the whole thing is clear. Syrup has a reducing action on zinc, and begins to become poisonous by forming a zinc salt from the very moment it is brought into contact with the metal. Further particulars would be interesting, and might be very serviceable. If the idea of poisoning is at all tenable, the correspondent would favour by giving an account of the way in which the syrup was prepared. If tartaric acid were used, the presence of a poisonous tartrate is not impossible.—F. C.

H. G. N.—*Bees Stupified or Dead.*—The bees sent had unquestionably died of starvation. The position they had taken on the comb was quite typical. The 'stupified' bees to which you refer were those that had still sufficient vitality to search about for food. The comb was perfectly dry, and if you had some time previously left the hive provisioned, robbers must have done the work.—F. C.

W. M.—*Winter Feeding.*—You will find in *Modern Bee-keeping* clear directions for making barley sugar for winter feeding.

J. Jenkinson.—We hope in an early number to give you information desired.

West Kent writes:—'I notice Mr. Dobbie, whose work on *Bee Pasturage* I have before me, advertising Myrobella plum as a material for hedging. Being a bee-keeper and about to plant a hedge (400 feet long), I should like to make use of your valued paper to ascertain the opinion of any of your subscribers who have it growing regarding its merits or demerits. My principal object is to have a good and strong fence, equal in *resistance* and *stability* to the slow-growing "quicks," and one that will arrive at much earlier maturity. Perhaps some of your correspondents can kindly assist me in coming to a conclusion, and also inform me how to plant, *i.e.*, whether two rows of plants are advisable, and their distance apart. I may mention the hedge will front a road.'

Business Directory.

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NOTICE.

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THE BRITISH BEE JOURNAL

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Editorial, Notices, &c.

MR. CORNEIL'S SUPER.

At the request of several of our readers we have great pleasure in inserting illustrations of the queen-excluder and section-case as described by Mr. Corneil, of Ontario, at the conversazione of the B. B. K. A. on the 20th ult., held at the offices of the Royal Society for the Prevention of Cruelty to Animals in Jermyn Street, a report of which will be found on page 496 of the *Journal*.

Many prominent British bee-keepers have discontinued the use of queen-excluders, but our Canadian brethren have not done so. Fig. 1 represents the

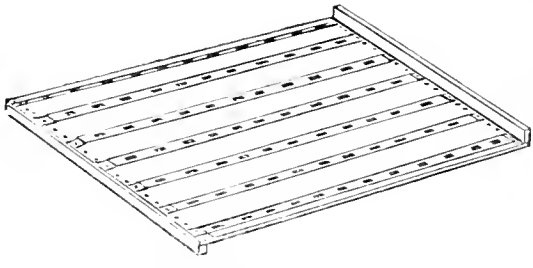


Fig. 1.

queen-excluder used by Mr. Corneil, which, instead of being a sheet of perforated zinc, as commonly used by British bee-keepers, is composed of wood $1\frac{1}{8} \times \frac{3}{16}$, with narrow strips of excluder-zinc between each slat. These are secured to a cross bar at each end, one of which is nailed on each side of the slats, thus making the rack reversible.

Fig. 2 represents the section-case, with three

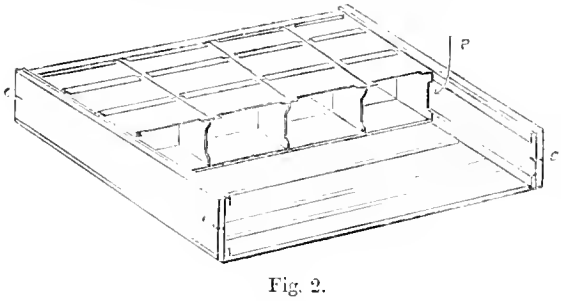


Fig. 2.

rows of sections shown in position—it holds six rows. A reference to the engraving will show that the sections have passages on each side as well as the top and bottom; this we consider a very great advantage. The bee-space around the end of each row of sections, as indicated at P, is also another good idea, as the bees having these passages provided are not induced to make so many 'popholes,' which so mar the appearance of sections.

The slats that form the bottom of this case, as well as those that form the queen-excluder, must both be of the same width as the bottom rail of the section you intend to use. This is important, as a direct passage is thus formed from the tops of the brood frames into the super, and, in cases of tiering up, from one super into the other, and so on, according to the number you may have the good fortune to be able to pile one on the other.

A board—not shown in the engraving—is fitted into each end of these section-cases so as to slide up to the sections if you should desire to keep only one or more rows on, to get them finished off at the end of the honey flow.

Mr. Corneil's method of keeping these boards in position is very simple, but in our opinion rather 'makeshift.' At the corners of the case you will observe saw-cuts marked *c*. A small spiral spring is taken and two pieces of stout twine are fastened to it. Knots are formed in the twine at suitable distances, the twine is slipped into the sawcuts, and the spiral spring in its continuous endeavour to draw these knots through the sawcuts, causes sufficient pressure to be exerted on the ends of the boards as to keep the latter in position. The pressure can always be renewed by adding a fresh knot to the twine, but twine at a tension is very liable to be affected by the atmosphere.

In our judgment, this case may be very much improved by an adaptation of wood screws (or rather *galvanised* iron, as suggested by our correspondent 'Amateur Expert'), as is used in the 'Heddon' hive, and by Mr. Dines in his 'Norwich' section-case as recently illustrated in these columns.

Mr. Corneil uses separators. Fig. 3 shows how they are cut to give passages to the bees at the ends as well as top and bottom. The slot indicated by dotted lines at A was suggested to Mr. Corneil at the meeting by 'Amateur Expert,' and Mr. Corneil was good enough to say he liked the idea and believed the bees would fill the sections better at the sides with these slots in the separators. Care

should be taken not to leave too wide a space at *b* if queen-excluder is not used.

The whole section-case is reversible, and contains many good points which we beg to commend to the

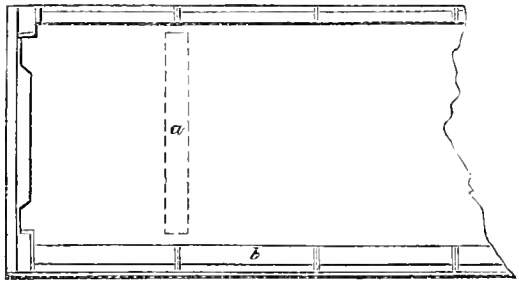


Fig. 3.

attention of all practical bee-keepers. Our gratitude is due to Mr. Corneil, by whose courtesy we are enabled to give these engravings: in a future number we hope to give Mr. Corneil's method of fixing foundation in sections to avoid 'pop-holes.'

BEES POISONED.

The correspondent who inquired why in forty stocks he had dead brood, some of which he sent to me, now supplies the requested information, which seems to justify in a very curious and satisfactory manner my supposition that it was a case of poisoning resulting from using zinc or galvanised-iron vessels for syrup or honey. (See last issue, page 529.) He states that he had kept about 1 cwt. of hard-set honey in a *galvanised-iron* tank, and to this he added hot water, and used it as food on the 20th of June last. On the 24th of the same month the weather changed, and feeding became needless, so the food stood in galvanised iron till September 1st. Then syrup was added to it which contained a little salt, and the whole then was used.

He found much of this food (?) remaining in the bottles in which it had been given, and this was 'thin,' and had a '*rough* flavour of zinc.' That this honey was poisonous,—whether it poisoned the bees or no,—is certain. The sugar of honey has the power of displacing five atoms of its own hydrogen from the zinc. The formic acid of the honey adds to the effect. With the syrup, the same poisonous process goes on, while the *salt* is converted into (the poison)* zincic chloride and carbonate of soda. Whether the salt is of use in any ease in bee food (and I more than doubt it), certainly here it was most mischievous. Zinc vessels should always be coated with beeswax, or a mixture of beeswax, Venice turpentine, and shellac, applied while the vessels are hot, and they will then do no harm. But galvanised-iron ones, as they form a galvanic couple, are too risky to be allowed a place in any apiary. Galvanised-iron is utterly ruinous to the flavour of honey, even if the exposure be only of short continuance. If it be prolonged, the honey is dangerous.

* I know of a case of a family being partly poisoned through eating salted meat that had been put to soak out some of the excess of the curing in a zinc tray.

It is not a little surprising that even to this day the bodies of extractors are sometimes made of this material, when the smallest observation would show that not only is the metal coated within with a whitish crust (zincic hydrate), but that the 'taste of metal' in the sweet product that has stood in it is unmistakeable.—Frank R. Cheshire, *Avenue House, Acton, W.**

GRANTHAM HONEY FAIR.

Various modes are adopted for the disposal of honey—by local sales, by honey companies, and by honey fairs. This latter plan has in past years been found eminently successful among the Lincolnshire bee-keepers, and generally the honey so disposed of has realised good prices. We are therefore pleased to note that our old friend Mr. Godfrey, with his compeers, purpose holding their annual Honey Fair in the Westgate Hall on Saturday, November 20th. It will be opened by S. Bentley-Rudd, Esq., Mayor of Grantham. This fair will afford a favourable opportunity for private families and the trade of

* As the matter referred to by Mr. Cheshire is one of considerable importance, we print *in extenso* the particulars given by the correspondent in question:—'To give full particulars I must go back to June last. About the 20th of June last I went into the apiary as usual, and found four stocks had commenced killing the brood. I had at that time about 1 cwt. of hard-set, old honey in a *galvanised iron* vessel, but had very little sugar by me, as I did not expect to want any at that time of year. I put hot water to the honey, and fed the bees at once. I opened the hives after the bees had taken 2 lbs., and found every cell empty of honey. On the 24th of June the weather changed, and the bees commenced to work. I had then about two gallons of syrup left; it stood in the vessel till about 1st of September; it was then drawn off and put into the other tank of *galvanised iron*, and 1 cwt. of Duncan's granulated sugar, and five gallons of boiling water (the water, I ought to have stated, was put in first, and the sugar stirred into it) with a little salt, but *no acid*, as I do not use any (I find with me it is unnecessary, as the syrup never candies after being given to the bees; I often have honey two years old unset, although it has been kept in a cold place). It was then drawn off at the bottom as required, and given to the bees the same as usual. I have used the vessel for years, both for honey and syrup. I myself suspected poisoning from the zinc, but could not account for the following:—First, if the grub was poisoned, why did it not die in the larva state, not live till nearly perfect (as it was all sealed brood that was dead in the hive)? secondly, how was it that in a hive I did not feed the brood was dead, the same as the others? I had three hives that the combs I left were so full of honey that they did not require feeding; one contained no brood, the *others* were the same as those *I fed*, the brood *dead*. Although the bees only took a small quantity of the syrup (about 3 lbs. in a month through twenty holes) they would eagerly steal from the feeding shovel, but I think they could *not get sufficient* in that way to do them *any harm*, where not fed, as it would only be a sip now and then; they would get on the shovel whilst I was reversing the bottle, and only odd bees that would get a sip. When I made the winter passages I found syrup in several bottles, which I reversed—that is, I put them the neck upward—and put them under the roof of the hive I had done last, out of the way of the bees. I have just examined the syrup in them, and it has turned *thinner* and *tastes* rough, the flavour of *zinc*. I suspect the honey standing in the vessel some time before it was used did the mischief, but should have thought that small quantity, mixed with so much (fourteen or fifteen gallons), would not have had any effect. The syrup when first given to the bees did not taste the same as now. I almost always taste when I feed.'—District Hon. Sec.

purchasing pure honey. We hope that the endeavours of our Lincolnshire friends, to whom so much credit is due for their voluntary work for the benefit of the members of the Lincolnshire Association, will be crowned with success, and that the fair on this occasion may prove as profitable as those of its predecessors.

USEFUL HINTS.

After heavy rainfalls again we have fine weather, and the bees take every opportunity of sallying forth on bright days, and sunning themselves on the alighting-boards when the hives are in sheltered positions with a southern aspect.

Removing Hives.—During the present, and next month, colonies may be safely removed to new positions, either at short or long distances. All that is required is, to keep the entrances of the hives at summer width, to cover them with perforated zinc to prevent the escape of bees, to secure the hive to the floor-board with screws, and to make the removal in the evening. The zinc should be removed from the entrances immediately after the hives are placed in their new position. At this time of the year it is better not to invert the hives, but to carry them in spring vehicles, by railway, or by hand. This is also the most suitable time for—

Establishing an Apiary.—Where space is not an object, the hives should stand in quincunx form, each hive being distant from another at a period of six feet *in all directions*, but where space is limited four feet may be allowed. We prefer a turf surface interspersed with evergreen bushes, such as common laurel, portugal laurel, &c., which may be kept within bounds by the shears, and still form excellent shelter for the hives, and receptacles for swarms. The aspect of the hives should be south or south-east, and all should face in the same direction. The grass surface should be kept closely mown in the summer, which is easily accomplished by running a small lawn mower between and around the hives on a wet day or cool evening, when the bees are not at work. The facility and comfort of working an apiary in such a position, and with such surroundings can only be appreciated on making the trial. We have forty hives thus stationed, on the southern slope of a hill-side, and so speak from experience. Our houses, also, are similarly placed. Each hive on separate stand is enclosed in an outer case, which affords space for outside packing, and is covered by a substantial, moveable, well-painted, or tarred, weather-proof roof. By these means we can work our hives on any system—storifying or doubling—to any extent, and we often have tiers of full-sized hives, four deep, when working for extracted honey, and to prevent swarming.

Wintering.—Mrs. Tupper, *invariably* noteworthy in her apiarian enunciations, has laid down the requirements for successful wintering in the open air as follows:—Chaff-cushions, abundant stores, winter passages through the combs, large colonies, and upward ventilation, with freedom from draughts of cold air through the hive. Mr. Cowan, whose little pamphlet on *Wintering* we advise all to read, sums up the necessary conditions thus:—Uniform temperature, sufficient quantity of food, a large number of young bees, and a hive free from moisture. Mr. Cowan also advocates a narrow passage over the frames, two pieces of wood $\frac{5}{8}$ inch square, and sufficiently long to cross all the frames, being placed $\frac{5}{8}$ inch apart, beneath the quilt, and about the centre of the hive.

There can be no objection to this arrangement, but in practice we have found winter passages through the combs to supply free communication with all parts of the hive. It must be remembered also that the so-called 'pop-holes,' at the upper corners of the combs, are found in almost every comb, and afford an additional passage-way from comb to comb for the bees without crossing the sides of the frames. Cutting winter passages every year—since the bees always fill them up in the summer—requires time and labour, and causes disturbance, opening of hives, and exposure of bleeding combs, all of which are especially conducive to robbing at a time when bees are naturally so inclined.

To avoid these evils we use small hollow tin cylinders, 1 inch in diameter and 1 inch wide, which are pushed into the combs and allowed there to remain, the circular piece of comb inside the cylinder being pushed out with the finger.

Permanent winter passages are thus formed, which the bees cover with a slight coating of wax or propolis, but never attempt to close.

We generally remove all over-laden pollen-combs, but are not careful to exclude all pollen from the hives, although we are inclined to agree with Mr. Heddon when he says, 'I know that all diarrhaetic excreta are replete with pollen; that bees will not suffer from the disease if their winter diet is confined to properly prepared, pure, cane-sugar syrup; that a normal colony of bees thus supplied, and placed in a dry, well-ventilated repository, in which the temperature never falls below 50°, nor rises above 55°, with the hive well covered, is surer to come out in spring, in a more perfect condition than do our horses and cows; that bees will sometimes winter in a very damp atmosphere, likewise in a high temperature, or in one as low as 30° or 35°, provided the food is as above described; and that we have mastered the problem, and *can* winter any or all of our colonies with certainty.' He also advocates wintering upon good natural stores, *i.e.*, sealed honey, and asserts his belief 'that a low temperature is the most common, potent, and indirect cause of the diarrhaetic disease.'

Other leading apiarists advise that bees should be wintered on stands two feet above the ground, to prevent the snow from clogging up the entrance, and from banking against the sides of the hive; for, although this would not injure the bees in a double-walled hive, it is very damaging to those in single-walled hives. Others advise that the entrances should be kept at full summer width and that the hives should be raised at the back, thus aiding the bees in the removal of their dead, and preventing the water from running in at the entrance, as well as facilitating the escape of internal accumulations of moisture.

Dr. Mason, another authority, sums up the requisites for successful wintering as follows:—Ventilation, except at the entrance, need not be taken into account; that proper food of either honey or sugar syrup, with a small quantity of pollen, to encourage breeding as early as January or February, is essential; that second only to proper food is the *right temperature*, viz. 45°, during the first part of the winter, and when breeding begins 55°, but not higher, since at 60° bees become restless and uneasy; that a special repository, or cellar, is desirable, as causing assured safety of colonies, a large saving in honey, and strong conditions at spring; that as soon as settled cold weather arrives (towards the end of November) he places his bees in the cellar, with the honey quilts glued fast, and the entrances open full size: and he concludes by saying that 'the wintering problem has been solved admits of no doubt.'

Honey Plants.—Mr. A. I. Root thinks it possible that there are four plants which may be profitably cultivated for *honey alone*—viz., *Melilotus leucantha*; figwort (*Scrophularia nodosa*); spiderwort (*Cloydia* or *Anthericum*); and *Echinops sphærocephalus*. Of the latter he says that it will continue to yield honey during a drought better than any plant he knows; the seed should be sowed early in the spring. Mr. Bingham states that the stalk is of a very fibrous

nature, and it is possible that this fibre may be used in making straw paper. Mr. Chapman ground 2½ lbs. of the seed and pressed from it 9 ozs. of fine clear oil, so that it is possible the plant may be cultivated for other purposes than its honey-yield. All agree as to its honey-yielding properties.

STANDARD SECTIONS.—After the commotion raised regarding the various sizes, shapes, and width of section-boxes, the British Bee-keepers' Association will be a bold Association if it attempts to put forth a standard, or even limits the prizes at its shows to one particular size and shape. Mr. Simmins' letter (659), and 'W. B.'s' of Patrickswell (600), and Mr. Bellairs' (667), are well deserving of careful study.

We shall not be at all surprised if the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{4}$ box becomes the general favourite; but, according to our present light, we do not see the possibility of dispensing with separators, especially after the answer Mr. McKnight has given to 'W. B.' (683), in which he says:—'Separators *are* in general use in Canada. Satisfactorily finished sections *may be obtained by a skilful manipulator* when favoured with a *good location* and a *rapid honey flow*. In the absence of *these*, or *any of them*, it is best to use separators.'

We should not like to state our own opinion as to *how often all* these conditions are to be obtained in the English climate, nor should we like to see *all* our prizes at the shows carried off by *experts* only.

STANDARD FRAMES.—Signs of dissatisfaction with the present Standard frame are not wanting. No doubt great and beneficial results have arisen from its adoption, but, as various opinions on the size of section-boxes from time to time crop up, such also will be the case with brood and storage frames.

Localities vary greatly in this country both as regards the quantity and quality of the honey yield, and hence hives of various form and size are indicated. But the disestablishment of the present frame, and the establishment of another of different form and size, would inflict great injury and inconvenience on the many who have adopted the former. Notwithstanding apiculture has made strides so enormous since the adoption of the frame, that it appears to us a moot point whether a *second standard*, without discarding the one now in use, might not be advantageously adopted by the Association and allowed to compete at its shows. In many counties and districts, our own amongst the number, we think a larger and deeper frame is indicated, both as regards wintering and summer storage, and we really see no reason why 'Standard No. 1' and 'Standard No. 2' should not exist and compete amicably together.

Virtually, the 'Langstroth frame' is the standard in America, although all others are tolerated. It may be interesting to give the sizes of the rectangles of a few of the frames in use as follows (outside dimensions only):—

British Standard.....	14 × 8⅛		
Langstroth	17⅝ × 9⅛	All American.	
Quinby (close-ended)..	19⅛ × 11		
American.....	12 × 12		
Gallup	11¼ × 11¼		
German standard	9 × 7		

By which it will be seen that *all* the American frames are deeper than the English standard. The German frame is often doubled by placing two frames end to end, thus making a frame 18 × 7; but the single frame is convenient for nuclei.

We should feel very much inclined to advocate a 'Standard No. 2,' of the dimensions 16 × 9⅛, as desirable for many districts. We have used a frame of about this size many years with the best results, for comb and extracted honey, and for wintering, and find it more easy in manipulations than the standard. The objection of bulging in the extractor may be dismissed, now that the use of wired frames is general.

SPACE ABOVE FRAMES.—We note our old friend Mr. James Lee's remarks (684) on this subject, with regard to the Woodbury hive. He is quite correct in stating the distance between the crown-boards and tops of frames as ⅜ inch in the *real* 'Woodbury.' Our hives—some of which we still possess—were by various makers, and have spaces of from ¾ inch to 1 inch. But even with ⅜ space the bees extend the combs upwards, and attach them to the crown-board, and they fill up the ⅜ space at the sides of the frames also, storing them with honey. Certainly not more than a ¼ inch is admissible at the sides, but ⅜ inch, and even ½ inch, *beneath* the frames is advisable.

We hoped to have added a few remarks on foul-brood, but the limit of our space forbids, and we must postpone them until next 'Hints.'

Errata in last 'Hints.'—Lines 5 and 6 from end, *for* 'were' *read* 'are,' and *for* 'crumbs' *read* 'combs.'

JOTTINGS BY AMATEUR EXPERT.

'Mel' sapit omnia.

My selection of the word 'Yankee' was most unfortunate, I wish it had been 'Canadian.' Mr. McKnight has personally thanked me for distinguishing between 'American' and 'Canadian.' 'We are both cousins to "Jonathan," but "Canadians" and "Britishers" are brethren, a much closer tie surely.'

My criticisms under the heading 'Mel sapit omnia' are all meant to be good-natured. I am extremely sorry Mr. Lee should think any of them were meant as sneering or stinging, it was farthest from my thoughts. Mr. Jones 'slinks ink' himself, so that I do not fear his being so thin-skinned as to take offence at my remarks, if I had not abundant evidence privately, which I am fortunate in having, to the contrary.

But those remarks were not an unmixed evil, much as I regret them, because it has been the cause of Mr. James Lee giving us a little of his experience. He has been a quiet observer for years, yet I scarcely remember him writing a line to the *Journal* for the benefit of us hare-brained young scribblers. I hope having once wetted his pen he will keep on giving us some of his 'observations.'

I beg to differ from friend 'Trevor Saynor' that leaving a large portion of bare flesh to the bees is a temptation of providence. On two or three memorable occasions it has been my good fortune to get several—a score or more—bees under my flannel under-shirt, next the skin. They seemed to so enjoy the warmth that they would run about and 'hum' to attract their fellows. If pressed by my bodily locomotion they would use—softly, oh so softly!—their business ends. Consequently, if you could have got a view of me just then, you would have imagined I was 'posing' for an outfitter's 'dummy,' and if you could read my thoughts you would find they were centred on the query whether, after all, our first parents had not the best kind of 'bee dress.'

The best way to be rid of the 'toad enemy' is to afford him no harbour. I lay ashes from the forge around my hives, which keep down the weeds. Failing that I would use tan; and failing that, deal sawdust.

A friend of mine from an obscure village in Westmoreland has sent me some seeds, through the editor, of 'Echinops Sphærocephalus,' popularly known as 'Chapman's honey plant.' My best thanks to him. He tells me the seeds of this plant were given to the present cultivator some forty years ago by a veteran Guardsman who fought at Waterloo. The old warrior has long since joined the great company, but I wonder if he

brought them from the Continent at the end of his campaign as a trophy!

The value of the gift is increased to me by my friend sending *all* the seeds he could procure after the plant was identified. I see Mr. Chapman is advertising his seeds in the Journals across the Atlantic at one dollar per ounce. Won't there be a sight in my garden next summer if the scene in Root's *A.B.C.* is realised? I shall have to get excursions run for bee-keepers to see it, as there will be no Ontario exhibit to attract them next year.

Mr. Walter Chitty, of Pewsey, has been giving an account of his visit to the Canadian exhibit of honey to bee-keepers through the columns of the *Bazaar*, but has made a very grave error in his illustrated description of Mr. Corneil's method of fixing foundation, by showing the top and bottom pieces of foundation of equal width. The fact is the bottom piece should be only two cells wide at most, and the top piece should come down to this within about $\frac{5}{8}$ths of an inch. I wonder where Mr. Chitty's foundation will be next summer if he faithfully carries out his own instruction to others.

He also says the bottoms of Mr. Corneil's crates, and also one of the sides, are moveable. The fact is the bottom is a fixture and *both ends are moveable*. But as I happen to know the editor of our *Journal* has engravings of this crate in preparation, I will simply refer our readers to them when they appear, which probably may be in the current number.

Mr. Chitty also says Mr. Corneil uses *a sheet of excluder zinc* between the top of his frames and the section crate, which is not quite correct. I should not call attention to these errors, but for the fact of a vast amount of very misleading instruction appearing in various Journals—gardening and otherwise—from time to time; and I consider this new method of foundation-fixing far too good to allow a wrong description of it to go forth unchallenged.

Mr. Lee writes about the genuine 'Woodbury' hive. I came across one the other day, empty, in a cottager's garden. If any readers of the *Journal* feel curious to possess a genuine 'Woodbury,' I have no doubt a few shillings would procure it, and they are welcome to the hint from—AMATEUR EXPERT.

Foreign.

FRANCE.

The *Bulletin de la Société d'Apiculture de la Gironde*, Bordeaux, has just published the annual report of the Society's own apiary, as rendered by their managing professor, Monsieur A. Durand. The report runs as follows:—

'The past season has been an unfavourable one for all apiaries in this district, but worse still for ours. First of all, our bees had to repair previous losses, build new combs, and bring their general state of prosperity up to the ordinary level; but honey has been so scarce that but little progress has been possible. Consequently, their inactivity has been so great that much of the comb-foundation given to them was left untouched. Let us hope we shall have a more prosperous season next year. The season was commenced with twenty stocks, which gave ten swarms. Thanks to liberal feeding these are now in a good wintering condition. All unsold honey, as well as the granulated, and what had entered into fermentation, was returned to them as food, after, of course, having boiled it for several minutes.

'In conclusion, the twenty stocks have given eighty kilos of extracted honey. Over ten of them did not collect sufficiently for their winter supplies.

'If, as it is to be hoped, no losses take place in the coming winter, we shall commence next season with thirty colonies. Many stocks affected with foul brood have been treated and cured by camphor, dissolved in alcohol. Having become weak, they were afterwards transferred into new hives, supplied with empty combs and some provisions. This new brood raised by these colonies was regular, well close together, and of good appearance. As far as I can judge they will go through the winter without difficulty.

'Our classes closed in September last. They have been regularly attended by a fair number of pupils, who will complete their course of instruction with us next year. In consequence of the want of honey, several kinds of demonstrative manipulations could not take place this year. It is not easy to assign a reason for this absence of honey; for, besides the climatic influences, it must be borne in mind that there are about a hundred stocks in our immediate neighbourhood.

'The honey taken has been of a very dark colour, but of an agreeable flavour.'

SOUTH AUSTRALIA.

The *South Australian Reporter* of September 30 says:—'The steamer *Orient*, which arrived last Monday, September 27, brought a large package of Cyprian queen bees from Mr. Frank Benton, Cyprus. There were twenty-four queens in all. Five were for Mr. W. B. Randell, and three for Mr. A. E. Bonny. The remaining sixteen were forwarded by rail to bee-keepers in Victoria and Queensland. Messrs. Bonney and Randell were pleased to find that all their queens had arrived in excellent condition, and speak highly of the skill displayed in packing them. The same steamer also brought fourteen Italian queens for Mr. Bonney, but only nine survived the voyage. Cyprian bees are now in great demand in Europe, and are considered by many apiarists to be the best bees yet cultivated. They are extremely prolific, and are celebrated for their very yellow colour and the great courage they display in defending their hives against all intruders. Mr. Benton is confident that these bees will prove suitable to Australian bee-keepers.'

Correspondence.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements)*

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

RUSSIAN BEE-KEEPING.—PROFESSOR BUTLEROW.

[687.] I have delayed writing to you, so as not to interfere with your exhibition, and to be able to prepare some communication for you. The flattering reception you gave to my letter and the plan of my hive, encourages me to again profit by your kindness for the sake of our beloved profession.

I maintain the utility of the legs to the hive. First, they enable the small bee-keeper to dispense with the services of an assistant, when it is wished to lift off or remove the hive from the floor-board, to clean it: secondly, in consequence of its sliding floor-board, which generally saves time in apicultural operations; thirdly, they remove as far as possible the bees from the neighbourhood of reptiles, other animals, and the humidity of the soil, and to bring them somewhat within the area of the feathered tribe, which are their natural neighbours. Our ancient apiculture which monopolised millions of roubles, placed the hives on the elevated parts of forests,

Even now many bee-keepers take it into their heads to fix their hives to trees, and find it very beneficial to the well-being of the bees, more particularly in winter.

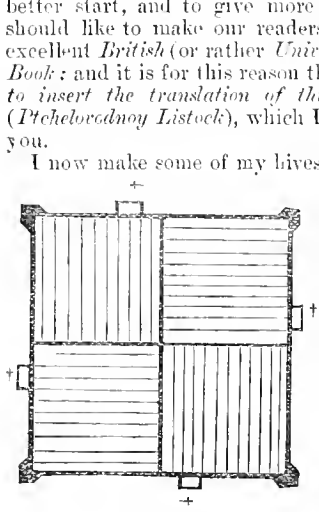
As regards wintering, our bees in the North are not so sensible of the cold as those of more southern countries. My colleague, M. Ambrojevitch, whose apiary is not far from St. Petersburg, leaves his hives of different styles to pass the whole winter under the snow, which covers them, and the bees turn out quite sprightly in the spring. To give them better protection against the cold, this gentleman surrounds them with twisted straw. His apiary is exposed to every wind, and the few trees in the garden give them but a feeble shelter. I always maintain that the selection of the bees must come from a rigid northern climate, which habituates bees to inclement weather. The reputation of the Carniolans, used to the cold of the mountains, supports my ideas. Generally, animal selection, as well as that of plants, proceeds from the north, whereas if the transplantation is in the opposite direction, it requires acclimatization, and frequently produces degeneration in the race.

You have found the windows in my hive useless. Experience compels me to accord with your opinion. The floor-board, if drawn out, shows the condition of the swarm.

We have had the sorrow this season of losing our dear Butlerow, who has done so much to advance our apiculture, having organised two bee-keeping societies —one in St. Petersburg and the other in Moscow—a School of Apiculture in the Government of Twer. He also this year started a Journal of Apiculture. The name of M. Butlerow, who was Professor of Chemistry and member of the Academy of Science, is well known in France as well as in Germany. He was only fifty-eight years of age, and enjoyed perfectly good health. He succumbed in consequence of the decomposition of the blood, caused by making a false step, which produced a rupture of a muscle in the calf of the leg. He died suddenly three or four months after this accident, having given up the dressing, thinking himself quite well.

All Russia sorrows for this learned as well as sympathetic man. For want of a better successor, the honour of continuing Professor Butlerow's works, and the management of the Apicultural Societies and the Journal, fall to my lot. Such being the case, in order to make a better start, and to give more interest to the work, I should like to make our readers acquainted with your excellent *British* (or rather *Universal*) *Bee-keepers' Guide Book*: and it is for this reason that I *ask your permission to insert the translation of this work* in our *Journal* (*Pchelovodnoy Listock*), which I shall be pleased to send you.

I now make some of my hives for four colonies on the same principle as my double hive, of which you have the plan. I gain the heat from the four adjoining colonies, and also economise in the cost of construction. These heavy hives absolutely require legs to enable the floor-board to be removed. The roof is in two separate pieces, and the bee-keeper can easily dispense with the services of an assistant.



† Entrances.

Being a partisan of your idea of an automatic extractor, I have devoted myself to render its construction suitable to small bee-keepers and meagre purses. To accomplish this I have replaced the gearing by pulleys, placed in sight in the upper part of the machine. Its framework can be easily fixed to a wooden tub or a tinned iron can These cylinders, without being essentially connected with the mechanism of the machine, add considerably to the cost of the carriage, and there is no difficulty in finding them or getting them made anywhere.—A. DE ZOUBAREFF.

FOUL BROOD.

[688.] I am afraid the 'Man of Kent' has not seen the last of foul brood; fancy three rotten stocks being 'turned out' by the other eleven robbing them! Now I should be very sorry to anticipate Mr. J. M. Hooker's experience of foul brood, or indeed any other bee-keeper who '*has been through the fire and come out clear*,' because, as a rule, the best men do not care to advertise their experience with the pest, and we are always pleased to hear what anyone who has suffered has to say on the subject, and, therefore, I join in the hope that Mr. J. M. H. will favour us with his experience if he *has* been through the fire; but I can assure the 'Man of Kent' that the disease is not got rid of by sacrificing the old combs, putting the bees on new foundation in clean hives, and feeding with salicylic acid solution, *if the disease has attacked the queen*, and herein lies all the difficulty.

Mr. Cheshire's remedy *will* cure a hive if the queen is free from the disease, but if she is afflicted it *will not*, and this is why so many failures are reported; but it will also prevent a healthy stock taking the infection if administered in small doses; therefore I advise in all cases where the disease appears: first, commence feeding *all* stocks in the apiary with phenol, this will certainly stop it spreading from one stock to another; secondly, remove the queen from every affected stock and supply one from a healthy stock; and, thirdly, carry out the instructions given by Mr. Cheshire as regards feeding the diseased stocks and spraying the combs with the medicated syrup, and for this purpose either salicylic acid or phenol will accomplish the cure.

The 'Man of Kent' says that in one instance he was perfectly sure the queen was not in fault, and yet the disease spread on the new combs, but how could he possibly know whether the queen was healthy or not? This is the entire question: and if there *was* any means of knowing I should not recommend her removal as a first necessity. The disease spreads by infection, and it is possible that a stock may be badly diseased and yet the queen be healthy; but while experimenting to find this out, she is likely to become diseased, indeed the wonder is that she does not fall a victim immediately the stock is attacked.

In 1866 I bought a stock of black bees with Ligurian queen of our deeply lamented friend Mr. Woodbury of Exeter, and for ten years afterwards I could not keep a single healthy stock. I lost twenty-four fine stocks in one season, and every year I added fresh stocks only to see them destroyed by the disease, until at last in despair I cleared my premises of everything connected with bees, and after twelve months started again. This year my apiary, consisting of twenty-two stocks in a garden forty feet square, was again attacked, and by adopting the system recommended to the 'Man of Kent' I have had no difficulty in stamping out the disease.

If the bees refuse to take the phenol when it is offered, they will not refuse to steal it. Place it in some empty combs where they can have access to it and they will soon clear them of any quantity, and when once they have taken to it they will take it also out of a bottle. Every stock will thus get a liking for it, and the disease will very soon disappear *when the diseased queens are weeded out*: but while the queen is spreading the disease it is useless trying to destroy it in the brood, and until we know how to destroy the germs in the body of the queen (for certain) it is *necessary* to remove her at once. I do not say it is impossible for a scientific

and experienced man like Mr. Cheshire to destroy the germs in a queen without injuring her, and so bring about the entire cure of a diseased stock, but when the disease has made its appearance in the apiary of a less educated bee-keeper it is unwise to tamper with it by experiments, and the sooner the source of supply is removed the better.

As to the cause and origin of the disease I am quite unable to offer a suggestion, but I am not sure that it cannot be communicated in wax foundation; and if so this would appear to explain the reason why skeps (if they do) escape, as the 'Man of Kent' says is the case.

I know from experience that it is a bad plan to purchase any second-hand hives, there is always a mystery about some people's losses. I was called in to see a neighbour's bees, found three stocks (all he had) dead, and foul brood in each; one was a 'Neighbour's' hive, the other two were bought of a neighbouring bee-keeper who had given up the fancy. The 'Neighbour' hive had thrown two fine swarms, and the kind neighbourly bee-keeper was called in to hive each swarm, in hives which himself supplied second-hand; and what is still worse these three diseased stocks had been cleared out by other neighbours' bees, and a few were constantly observed going in and out up to the day of my visit, which caused the unsuspecting owner to wonder very much why they grew weaker and weaker; therefore it is not difficult to suggest how my recent attack originated.

I have used a good deal of camphor, but am quite unable to say anything in its favour; it may be a preventive, but I do not think it is a cure for foul brood.—T. F. Ward, *Church House, Highgate, Middlesex, Nov. 11th.*

SECTIONS.

[689.] Your esteemed correspondent, 'E. H. Bellairs,' is well known as one of the foremost of our craft. Judge, therefore, my surprise when I found him, in your last issue (667), some twelve months behind the times. It was not at the last annual general meeting of the B.B.K.A. that the question of a standard size for sections was discussed, but at the general meeting of 1885. I had the honour of being present and hearing the protest of Mr. Bellairs and other gentlemen against the proposal read by the Secretary. These protests, coming from prominent individuals, had great weight with the meeting; but by far the most important protest was the memorial from the Hertfordshire Association presented by the Rev. J. Lingen Seager.

I agree with Mr. Bellairs that no standard size for sections is required. Supply and demand will settle this question.

Mr. Bellairs is in error in stating that a clause defining the 1-lb. section was inserted in the prize schedule of the Norwich Show, neither was the competition at that show in any ways restricted, the entries being the largest on record. Such a clause was inserted in the prize schedule of the Shrewsbury Show in 1885; the entries were, however, I believe, very large notwithstanding this restriction. It was explained at the meeting above referred to that this clause had already been adopted by the Royal Agricultural Society for the Shrewsbury Show, and that it was too late for any alteration to be made.

Mr. Bellairs refers to the admirable way in which Mr. Corneil's sections arrived, and considers it an argument against the $4\frac{1}{4} \times 4\frac{1}{4}$ section. I had the pleasure of being present at both the meetings arranged by the B.B.K.A. for meeting our Colonial friends (and most enjoyable meetings they were). No objection was offered to the $4\frac{1}{4} \times 4\frac{1}{4}$ size, but Mr. Corneil considered that an oblong shape was more handsome. Our Colonial friends advocate small and narrow sections. Undoubtedly the large contact of comb with the wood formed a most important part in connexion with their safe transit to England. But the main reason of the whole consignment of the Canadian Exhibit arriving in such good condition lies in the fact that Mr. Jones and his colleagues were wise in their generation. They personally superintended the shipment in Canada, the unshipping and reloading on the railway at Liverpool, and its transmission from the railway terminus to the Exhibition.

As to what sized section will command the most ready sale, Mr. Bellairs' test of the sale of one dozen sections was no test at all. Our bee-keepers must not be guided by such a chance sale as this at some country show, but by that which will sell best in our large cities and towns.

Your correspondent's suggestion that the B.B.K.A. might take a lesson from the Hants Bee-keepers' Association in the preparation of its prize schedules is somewhat amusing. The words, 'not exceeding,' were, I think, taken by the Hants Association from the prize lists of the B.B.K.A. in former years. At any rate they were always so worded until recent years, the alteration to classes for 1-lb. and 2-lb. sections (without any definition as to the actual size, except on the occasion referred to above) being made, I believe, at the suggestion of the Judges who officiated at their Annual Exhibition; and so far, certainly, the alteration has been successful in securing large entries.

I should strongly advise those bee-keepers who have already made their market for $4\frac{1}{4} \times 4\frac{1}{4}$ not to make any serious departure from that size.—A Member of the B.B.K.A.

ONE-AND-THREE-QUARTER SECTIONS.

[690.] The question of sections appears to be interesting bee-keepers considerably just now, and though I generally avoid writing on controversial questions it seems that few have tried the $1\frac{3}{4}$-in. sections, and it is therefore perhaps fair to chronicle one's experiences.

I will at once state that $1\frac{3}{4}$-in. sections *without* dividers are, in my estimation, preferable for many reasons to those that are broader or narrower. I say this after trying nearly every kind of super that has been brought out since the days of the Crystal Palace bar super, made by that excellent workman, Mr. Lee, of Bagshot (whose name I am glad to see reappearing).

The $1\frac{3}{4}$-in. sections were introduced to my notice some three years ago by Mr. Simmins, who most kindly wrote to me several times on the subject. I tried them the following summer and with great success, winning, amongst other things, a silver medal with them. I had intended to use no other sections, but, owing to my having to change my residence, I have had to break up my apiary, and I have not in consequence thought it worth while to specially import any of this width in making a fresh start here.

The following are briefly the advantages:—(1) Perfectly level sections can be worked with them. (2) From being more or less a continuous super (as there are *no* dividers) the bees take more readily to them and work more energetically in them. In consequence the sections are more quickly finished off (an absolute necessity if *really* good sections are to be obtained), and certainly, for some reason or other, the sections were in my case better worked up to the edges—another important item—than the 2-lb. sections usually are. (3) The sections are usually a more even 16 oz. than those which are 2 in. in width.

I am surprised that 2-in. sections have held an entire monopoly of the market for so many years. It recalls a very pleasant visit to Horsham about ten years ago, when I believe I saw the first American sections imported into England.

Will the extra labour (of altering the pitch of the cell) given the bees in an inverted crate, really pay in the long run?

P.S.—Let me warn those who try 1¾-in. sections particularly *not* to use dividers.—ASHTON G. RADCLIFFE, *Grinstead, Sussex.*

QUEEN INTRODUCTION.

[691.] I regret to see in No. 668 that one of your correspondents thinks my praise of Mr. Simmins' plan of 'direct queen introduction' 'somewhat fulsome.' But I will reiterate that not only are the heartfelt thanks of every queen-introducer due to Mr. Simmins for his 'direct introduction,' but so also are every apiarist's thanks due to Mr. Cheshire for his 'Foul Brood Cure,' Mr. W. B. Webster for his 'Carbolic Fumigator,' and Mr. J. Heddon for his Reversing principle.

If that 'Benighted Essex Bee-keeper' had experienced the benefits, in saving of queens and time which I have this year, all through Mr. Simmins, he would not, I am sure, find any language too strong to express his sense of indebtedness.

I can only say, in conclusion, give the Simmins's plan a fair trial, and it will be found far better than *any other plan* of direct introduction.—G. STOTHARD, *Welwyn, Herts.*

CHEAP CARBOLIC-ACID FUMIGATOR.

[692.] Those of your readers who wish to try carbolic acid in the place of smoke, and do not care to purchase an instrument on purpose, may for threepence convert their smoker into as efficient an apparatus as one costing 4*s.* 6*d.* The method is taken from the *Canadian Bee Journal*, where it is described in an article on chloroforming bees. Procure three small sponges (very suitable ones are sold almost everywhere at a penny each), insert one in the smoker-barrel and another in the nozzle; saturate the third with carbolic and place it in the smoker, it will thus be between two dry sponges, which effectually catch any surplus moisture, and prevent it from dropping into the hive. I have only tried it a few times, but it seems to answer capitally.—A. T. P., *Warwick.*

ART IN THE APIARY.

[693.] Why is it that modern hives are usually so inartistic that strangers compare them to something between a dog-kennel and a tombstone? We all want to keep the body of the hive cool in summer, and to do so are obliged to use a light-coloured paint. A skep with its straw hackle seems to fit in and harmonise with a cottager's garden; but our manufacturers say the hackle must go, and a wooden—very wooden arrangement must take its place.

I do not want to advocate a high-art examination to be added to that of the B.B.K.A., but, writing as an amateur, I feel sure I am only expressing the opinion of others who take a pride in both their bees and their garden.

Will you allow me to make a small suggestion and to introduce our old friend, 'cork-dust,' as a slight help in our difficulty? I can best illustrate my meaning by referring to Neighbour's straw-panelled hive; and assuming I had one with wooden panels instead of straw I should paint all a medium brown and covering the panels with a mixture of paint and putty of the consistency of, say, thick treacle, sprinkle them with cork-dust (most easily applied when the surface is horizontal). The mixture speedily sets, and holding firmly the base of the particles gives a soft roughcast effect more pleasing to the eye than plain paint, and from the multitude of tiny shadows cast by the cork-chips keeps the body of the hive cooler than if painted a staring white, and yet affords no harbour for insects.—HONEYSUCKLE.

CELLARING BEES.

[694.] 'Useful Hints' wants to know if anyone has tried wintering bees in a cellar or other building, and if it answers. I tried one hive last winter, and my opinion is that in a *severe* winter bees are better protected in the American fashion. The temperature of ordinary cellars or good outbuildings in *cold* weather is such as to keep bees inside their hives and at the same time they are not exposed to violent storms, but I think it will be found that the consumption of food is greater than when they are kept in the open.

But, sir, there is one very great drawback to cellaring bees in this country, and that is, the variableness of our climate. One day we have our weather from the north pole, the next from the sunny south, and sometimes the winter sets in early in October; and the cellarist, not having his hives prepared for inclement weather, takes them at once into his cellar, then in November some remnant of the summer having been delayed on its way arrives and our bees are the first to make it welcome, and, to demonstrate their feelings, begin to march out of the entrance-hole, when, to their dismay, they find all is darkness. However, bees, like some men, believing there is no effect without a cause, and feeling conscious of warmth, commence a diligent search for those glorious rays in which they so delight to fly. Bricks, earth, &c., however, prevent this boon, and the result is, that hundreds, or thousands, never find the entrance-hole again, but, like a shipwrecked seaman on a rock, die in despair.

But there is more danger still as the spring approaches, as the bees are then more anxious after their long confinement to have a flight, and since too long confinement is injurious to bees it is important that they should be so situated as to be able to take advantage of a warm day. If Mr. Jones would have the kindness to tell us when they are going to send us two or three months of severe cold weather without a break, we might venture to house our pets. But with the changeable character of our climate I think it is best to keep bees in *good weather-proof* hives and let them stand in the open air.—A. GREEN, *Selston, Alfreton.*

OBTAINING HEATHER-HONEY.

[695.] The great obstacle in getting this class of honey fit for market and eating is the extreme difficulty of extracting it from the combs. This is partially overcome in Scotland by using supers on the Stewarton type of hive and shallow boxes on the bar-frame hive, by which thick shallow combs of this delicious honey are produced in a form highly presentable for either exhibition or the table. In this case extracting is of course unnecessary, but in the stock combs requiring to be kept as winter stores there remain large quantities of ling honey with which it is almost impossible to deal, besides such honey is said to be not the best kind of food to winter on.

The hives are brought away from the moors say at the end of September, and in the cool north, to deprive the bees of their combs and feed up with syrup into others, is a risky proceeding, for the weather is there so cold, especially at nights, that the heat necessary for evaporating superfluous moisture from the stores and enabling the bees to seal all up is often absent. This method then often gives us an excess of unsealed food productive of fatal dysentery in the hive.

Here in Yorkshire, an intermediate county, custom almost confines us to the use of the ordinary bar-frame hive (barring skeps), and when we are fortunate enough to get a fair heather season we are met by the annoyance of not being able to get bees to work in sections, the best of the heather glut being occupied by the bees in filling the frames with a honey which will be to us no better

than so much syrup. Only when the frames are filled will the bees go up into sections, and we get simply the results of the season's fag end which may or may not be satisfactory, probably not.

I suggest to such of your readers as are troubled by these difficulties a way out of them:—After extracting all flower and clover honey at the end of July, feed eight or nine frames with syrup rapidly, and carry out the hive to the ling *heavy* instead of *light*. If the heather be late in blooming or the weather wet, instead of starvation staring them in the face, the bees will be all right, attendant upon propitious conditions for gathering. When the flow of honey comes in they will be *compelled* to go up aloft instead of wasting their best energies in gathering stores for themselves *versus* ourselves. As sections are filled they can be replaced, and on arrival home can be removed, the bees being driven to occupy only such frames as are deemed to contain sufficient food for winter. The frames and the bees need not be further disturbed, and the whole labour and risk of safely wintering reduced to a minimum. In short, winter stores are taken out, brought home, and bees forced upstairs by this plan; much time is saved and honey is stored where we want it.

Again, as the climate of the moors is cool, so comparatively are the sections with their multitudinous ventilating chinks keeping back breeding drawing out foundation and sealing. I therefore purpose using a bottomless box, say four inches deep, in place of a section crate; the wooden top of this box shall slide in with strips attached of super foundation in rows, one of the sides being a strip of glass sliding down a groove so that the condition of the super may be seen without disturbance. Smoke can be used to drive the bees down upon its removal, and the two essential conditions to gathering heather honey are I think fulfilled. The question of using zinc excluder is, as now, a matter of choice. Bees will be forced up into warm supers when the whole gathering will be presentable and saleable, and the short heather season be utilised all for the benefit of the bee-keeper.—R. A. H. Grimshaw, *Horsforth, Leeds.*

ASPECT OF HIVES.

[696.] In 'Useful Hints' of November 4th correspondence is requested on the subject of the hives with the entrance to the north.

My hives are placed so as to have entrances all four ways. The strongest stock this spring had its entrance facing the west. It is shaded on the south side by an apple-tree, so that it gets *scarcely any sun*. The first swarm this year came from a straw skep with west entrance; the second swarm from a skep that stands in a tea-chest, with entrance to the north, so that the *skep* does not get *any sun*. They are both on the *ground*.

The best returns are from hives facing the north, with combs crossways of entrance, and dummy at the back. Some of them are long hives, others are salmon-boxes (which hold just eight frames, and in summer are placed one above the other two or three deep), and the dummy is only ¼ inch thick, which is at the back. The entrances get the full force of a north-west wind, so strong that I have had the hives blown over (although the legs are short and strut out back and front), but the hives (I have ten in that position) get the sun at the back, where there are *no bees*. I have had hives facing the north many years, but the strongest test was the year Mr. Abbott introduced the Combination Hive (I adopted bar-frames the same year). I had a skep facing north, and in the shade; I drove it, and at night I cut the combs that were *empty*, or contained *brood*, to fit the frames. I put the frames (five of them) into a hive made as follows:—A salmon-box 18 × 12 in. pieces across each end to make 14½ × 12, a piece cut out of the bottom of the box 6 × 4 to make entrance, a piece 9 × 8 nailed to bottom over the hole projecting 2 in. in front for alighting board, a ¼-in. dummy at back. Another salmon-box was sawn through 3 in. from the top at one end, tapering at front and back to nothing at the other end, which, when turned bottom up, formed the roof. Slanting endways, plinths were nailed round. The piece cut off the end, 3 in., was nailed in front for a porch, and the hive was made. The bees (only one stock) were put in and fed up. The joints of the salmon-boxes were not altogether waterproof, the front (facing north) only scant ½ in. The bottom being in two boards, there was a crack up the middle, the quilts got wet, the bees got scarcely any sun; it was the *first* to *swarm*. I think the *only* time that a *southern* aspect is *necessary* is when the bees have been neglected; I mean, when the honey has all been taken and not fed up soon enough, as the only time (when I first adopted bar-frames) I had dysentery was when there was something the matter with the sugar, so that the bees would not take the syrup, and I did not like to throw it (1 cwt.) away, which at last I was obliged to do, so that they were not fed till October. Those that stood facing the south lived through the winter, but I had ten hives facing the east and close together, so that the first shaded the others; the first that got the sun lived, the others all died. Mine is a very cold situation, being on a hill and catching the full force of all winds. It is in the North Midlands.—District Hon. Sec.

HIVES WITH A NORTHERN ASPECT.

[697.] You ask in 'Useful Hints' for a bee-keeper's experience of a northern aspect for bees. I myself have a bee-house holding about twenty hives, in which a few years back I had bees all round the interior—north, south, east, and west. I was prompted by reading Nutt, and several authors on bees, to give a northern aspect. Mine then were mostly straw skeps, on which I used to place sections on top, on a flat board with large hole in centre, which they do very well in with management, although I seldom keep more than two or three three now; as I prefer more intimate acquaintance of the interior. For two winters those bees facing north have done very bad indeed; they were all up to the same weight, strength, &c.; some of them died, and the others were not up to those with east or southern aspect. From my experience, I say, Place bees with a south-east aspect. By not robbing them too close—in fact, leave *plenty* of stores in hive, and uncap a little at intervals in spring—they will be sharper for business in spring, and pay better, than all the coddling with syrup, &c., can make them. I have seen one hive this season (which was put in a half-inch base; they had plenty of stores, holding about thirteen frames, which were not disturbed since taking off sections last year) yield more than any other hive in this neighbourhood, and I have had the pleasure of handling about one hundred; and from my experience, I say the same as our much-respected friend, Mr. Simmins, who is a great friend to all bee-keepers: Bees will live as well through the winter in a single-wall hive of only half-inch (mind, under a good covering protected from north winds, provided they are strong, and *plenty* of food) as any double-walled hive you can find. If any bee-keeper thinks of trying a northern aspect, I say, *Don't do it.*—A. Clayton, *Welling, Kent.*

HONEY COMPANIES AND LOW PRICES.

[698.] I am afraid many of 'our' readers attribute, to a large extent, the present low prices to the Honey Companies, and apparently with some reason, for taking the typical bee-keeper who, after selling all he can locally and at as high a price as possible, sends the rest to the Company only to find himself afterwards under-

sold in his own locality with possibly his own honey. In fact, the good old days of 1*s.* 6*d.* or 2*s.* per pound have flown for ever, and the local price will and must go down to the price given by the Honey Companies, added to a fair percentage for carriage, bottling and crating, travellers' expenses, bad debts, and a working profit.

These the Companies can undertake at a cheaper rate than ordinary bee-keepers, and if we take into consideration foreign competition we shall find that the local man gets an actually higher price than he otherwise would without the aid of the Company.

I think strongly that the Companies are our surest safeguard against foreign friends, and are deserving of the heartiest support of all bee-keepers.—HONEYSUCKLE.

QUEEN INTRODUCTION.

[699.] 'A Benighted Essex Bee-keeper,' writing on queen introduction in your last issue, exclaims, 'What am I to do?' If he will take my advice he will throw all these systems aside and turn up my letter (464) in the issue of July 22nd, and there he will see the only system of direct introduction that has ever been brought before the readers of this *Journal*. I have done and seen it done with hives in all conditions, and at all times of the year, and never heard of but one failure. But I suppose it was too simple for bee-keepers to try it, as I have only seen one who tried it, and only after all other plans had failed.—JAS. SADDLER, *Hon. Sec. Forfar B. K. A.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

F. W. C.—*Winter Food, Weak Colony.*—1. The weak colony which is short of stores was probably robbed by other bees. The dry sugar, given as you describe, may answer the purpose, but as winter food we prefer candy or barley sugar. 2. *Double Skep.*—Allow the skeps to remain as at present through the winter months, and at spring remove the lower one and feed on syrup. A hole cut in the outer case, opposite the junction of the skeps and the entrance, is desirable, to enable the bees to fly more freely and to return more quickly in bright weather. 3. In the two specimens enclosed we cannot discern the slightest approach to a yellow band, and, consequently, are of opinion that the bees are blacks and not hybrids.

J. D. M.—While we regret that you have suffered any inconvenience, we consider it our duty, before printing your letter with refereuce to an advertisement in the *Journal*, to bear in remembrance the sage advice—*Audi alteram partem.*

COFFIN DICK.—We are unable to refer to the result of the show of the Cheshire County Association. Mr. D. Morrisson, of Altrincham, hon. sec., will be able to furnish you with the information required. 2. Major Bennett, 50 Gordon Street, Glasgow, Hon. Sec. of the Caledonian Apiarian Society, has an intimate knowledge of the most famous Scotch bee-keepers and the counties where they reside. 3. We believe that honey removed by centrifugal force from the cell does not change its character by so being taken. 4. The proposed question is too inquisitorial, and it would be a wiser discretion not to request its insertion in our columns.

X. Y. Z.—The correspondent's address is attached to his communicatiou of last week.

BASIL.—The sample of honey forwarded is very pleasant, of a good flavour, and a fair consistency. The body of it is chiefly from clover, but there is a mixture from other sources.

WEST MIDLAND, and others.—The articles on Doubling and Storifying which appeared in the *Journal* earlier in the year will shortly be published, with considerable additions, in a pamphlet form.

A LADY AMATEUR.—We are much obliged by your communication; but we think you will agree with us that 'Drone' has in our previous number received sufficient advice as to the proper mode of bumping. We are pleased to hear of your success.

W.—Albino bees may be procured through Mr. E. Homan, of Bedford Park, Acton.

STONE HOUSE.—Received, with thanks.

E. C. S.—The sample of foundation is suitable for sections. English foundation is generally made by machines imported from America. We should be inclined to say that your sample is of English manufacture.

D. EIDDIE JONES.—The sample of honey is partly heather; it is of fair quality, and by many people would be much appreciated.

J. F.—The retention of drones to the present time would indicate that the powers of the queen are waning.

ERRATA.—Page 523, col. 1, line 8, *for* prescribed *read* proscribed; page 526, Bumping *v.* Driving, line 1, *for* gave *read* saw; and line 11, *for* clod *read* cloth.

Answers to several Queries are postponed till our next issue.

Business Directory.

For the use of Manufacturers and Purchasers of Bee-keeping Appliances.

HIVES AND OTHER APPLIANCES.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BURTT, E. J., Stroud Road, Gloucester.
EDEY & SON, St. Neots.
HOLE, J. R. W., Tarrington, Ledbury.
HOWARD, J. H., Holme, Peterborough.
MEADOWS, W. P., Syston, Leicester.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.
WALTON, E. C., Muskham, Newark.

HONEY MERCHANTS.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BRITISH HONEY CO., Limited, 17 King William St., Strand.
COUNTRY HONEY SUPPLY, 23 Cornhill, E.C.
HOWARD, J. H., Holme, Peterborough.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
WALTON, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
BENTON, F., Munich, Germany.
HOWARD, J. H., Holme, Peterborough.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
SIMMINS, S., Rottingdean, near Brighton.

METAL ENDS.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
LYON, F., 94 Harleyford Road, London, S.E.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

ABBOTT BROS., Southall, London.
BALDWIN, S. J., Bromley, Kent.
BLOW, T. B., Welwyn, Herts.
HOWARD, J. H., Holme, Peterborough.
NEIGHBOUR & SONS, 149 Regent St. & 127 High Holborn.
STOTHARD, G., Welwyn, Herts.

THE
BRITISH BEE JOURNAL

Communications to the Editor to be addressed 'STRANGEWAYS' PRINTING OFFICE, Tower Street, St. Martin's Lane, W.C.'

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Editorial, Notices, &c.

SECTIONS.

We promised in our last issue to give our readers a description of Mr. Corneil's method of fixing foundation in his sections. In fulfilling that promise we also take the opportunity of giving the sizes of a few sample sections from the Ontario exhibit, which we believe were a fair average of the sections on sale there.

Fig. 1 is an ordinary one-piece section with bee-

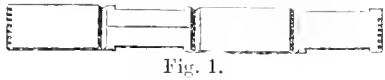

Fig. 1.

passage on the top and bottom when folded. We insert this to illustrate, by contrast, a hint given by our Canadian friends as shown in Fig. 2,

Fig. 2.

which is a similar section with bee-passage at the side as well as the top and bottom. Fig. 3 represents one side and one end of Mr. Corneil's sections. They are what are known as four-piece

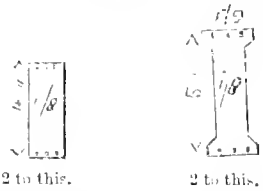

Fig. 3.

sections, being dovetailed at all the corners. These sections are provided with bee-passages all round to suit his section cases, as illustrated by us last week. The section from which this sketch was made weighs 12½ ounces. Four-piece dovetailed sections are not new, we first saw them in 1881.

Fig. 4 is also a representation of a four-piece

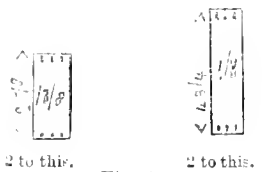

Fig. 4.

section, bearing the stamp of Mr. S. T. Pettit of Belmont. This gentleman was one of the commissioners that came from Ontario, but remained but a short time in England, being compelled to return to Canada, consequently British bee-keepers generally missed the pleasure of making his acquaintance. The section from which this sketch was taken weighs 11½ ounces. As you will observe, it is smaller in area than Mr. Corneil's, but it has been built *without* separators. It is slightly bulged, but the comb is ⅛ of an inch thicker, the bees only allowing themselves one bee-space between each row of sections instead of two, as is the case when separators are used. This fact is also, in our judgment, a slight argument against combs 1⅛ inch thick, being more 'natural.' Mr. Pettit has not adopted the plan of giving passages on all sides of his sections if this is the kind of section he uses.

Fig. 5 is a sketch of a section raised by Mr.

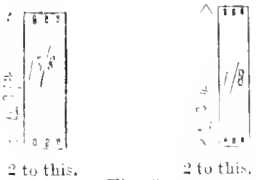

Fig. 5.

McKnight of Owen Sound. It is the largest of the three we have chosen for illustration. The sides are nearly 1¾ inches wide. They have evidently been raised by separators that were too narrow, consequently the comb is bulged at the top and bottom. We must confess our surprise when we find Mr. McKnight's section scaled 19 ounces. We did not succeed in obtaining one with Mr. Jones's stamp on it, so we have not the pleasure of giving a description of his sections.

We would observe these sections are all made of spruce, not bass-wood, the material of which the imported one-piece sections supplied by our dealers are usually made. We believe we are correct in saying the Canadians had not a single one-piece section, nor one wider than 1¾ inches in all their exhibit.

Fig. 6 represents a section with the foundation fixed as described by Mr. Corneil on page 496 of this *Journal*. It is very important that the narrow strip of foundation at the bottom should not exceed one quarter of an inch in depth. Also that the

foundation should fit well at the sides, or the bees will soon gnaw pop-holes in it. And the time for reversing is when the bees have built the wide top piece down to meet the bottom narrow strip.

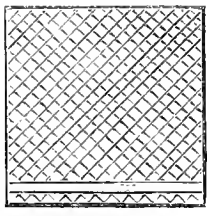

Fig. 6.

The question of width and size of sections has been reopened among us by the introduction of these well-filled sections into our midst by our Canadian friends. Undoubtedly many of our advanced apiarians will test the merits of the different sections in the coming summer; meanwhile we will content ourselves by drawing our readers' attention to the fact that there is evidently a very great difference in the size of sections used in Canada, but all seem, as far as our observation goes, to be equally well filled. This we attribute to the vigilant selection of our friends, who undoubtedly brought over the best they could select from a very large quantity rather than to any difference in the shape and size of sections used.

DEPARTURE OF MR. J. A. ABBOTT FOR AMERICA.

Nothing is more indicative of the progress of apiculture than the energy and enterprise exercised by those who minister to the wants of bee-keepers in supplying them with varieties of bees from all climates, and with the best of hive-appliances. All bee-keepers are acquainted with the untiring exertions which have been made for many years by Mr. Frank Benton to supply the bee-keeping world with the Eastern races of bees. In former volumes we have had occasion to narrate the history of his travels, his difficulties, and his sufferings, to achieve the object of his desires. More recently we have read with interest the reports of the travels of Mr. T. B. Blow, of Welwyn, to Cyprus, Asia Minor, Italy, and Carniola, to acquire an intelligent knowledge of the sources of supplies of queens from those countries. And now we have received information that Mr. James A. Abbott, the eldest son of Mr. C. N. Abbott, the first editor and proprietor of this *Journal*, is about to proceed to America to visit the most experienced bee-keepers and hive-makers of that country. For many years Mr. James Abbott's presence has been familiar to the frequenters of shows, and his knowledge of the habits of bees and his intimate experience of the economy of the hive are acknowledged by all bee-keepers. We wish him a pleasant voyage and a safe return. We hope he may be successful in the special object of his distant journey; and we are pleased to announce that he has promised that he will from time to time forward to us accounts of his progress and of his visits to Transatlantic bee-keepers.

HIVE MANUFACTURE.

Frequently the remark is made that those who take first prizes for hives at Shows will be unable to supply them at the prices at which they have been marked; and this has been the cause of considerable dissatisfaction. We are of opinion, however, that by the employment of machinery, by judicious purchase of timber, and by economy in working, this difficulty may to some degree be overcome. We, therefore, desire to direct the attention of those concerned in the manufacture of hives to our advertisement columns, where a notice will be found of a circular hand-sawing and boring machine which may give the necessary assistance. It is made by Messrs. Houghton Brown Bros., of Kingsbury Iron Works, Ballspond, and it is specially adapted to hive-makers and joiners.

NOVELTIES.

We have received from Mr. E. C. Walton, North Muskham, Newark, a specimen of a wicker covered jar, similar to the ones exhibited by him at the Norwich Show, and in which the honey was presented to H.R.H. the Princess of Wales. The one before us is a great improvement on those, in that the jars are made to slip into the wicker-work covering and can be easily removed for the purpose of cleaning them. It is also provided with a light handle, so that a purchaser can carry away the jar of honey without being obliged to wrap it up in paper. We are also pleased to find that the prices have been very much reduced. They can be made to fit any sized bottle, and are both useful and ornamental.

In Memoriam.

We regret to have to record the death, on the 12th of October last, of M. Jules Madaré, who was for many years the respected Chairman of the Société d'Apiculture de la Somme. It was owing to his perseverance and zeal that the Society has attained the position it now occupies. His loss to the Society is very great, as by his even temper, his spirit of conciliation, and pleasant manner, he was able to preserve harmony amongst the members, and to secure the good will of every one. Those most in constant intercourse with him speak in the highest terms of his amiable qualities, which enabled him to raise the Society to its present position. His death removes one of the leaders of progressive bee-keeping in France, and is a loss to bee-keepers which will be severely felt.

GLEANINGS.

In the *Zeitschrift für physiologische Chemie*, *Band* x., *Heft* 3, Dr. A. de Planta describes his researches on the chemical composition of some of the nectars in plants. He says it was a great pleasure for him during his researches on the life of bees to have established the relation which existed between nectar and honey, the nectar serving for preparation of honey. There was a great difficulty in getting a sufficient quantity of nectar, as plants yield it usually in small quantities, but there are some exceptions. Amongst these are *Protea mellifera*, *Hoya carnosa*, and *Bignonia radicans*, which contain such large quantities of nectar that it is easily collected. Thumberg says in his *Flora Capensis* of *Protea mellifera* (*Zuykerbosches*, *Zuykerboom*, *Tulpboom*) that it flowers in autumn, that is to say, in March and the following months. The flowers are often half filled with watery honey, which furnishes an excellent syrup, after it has been filtered to rid it of insects and impurities, and slightly evaporated by a gentle heat.

This syrup is an article of commerce at Cape Tow

Two bottles of it were procured, the specific gravities being 1·375 and 1·372. It had a slight acid reaction, but contained no albuminoids, or nitrogenous matters. It contained 73·17 per cent of solids, of which 70·08 is glucose and 1·31 per cent is cane-sugar. By glucose is meant a mixture of crystallisable grape-sugar (dextrose) and uncrystallisable grape-sugar (levulose). Both have a similar chemical composition. This glucose can already be formed in the nectar by the action of the ferments it contains, which act upon the cane-sugar and transform it into glucose, and this inversion can be continued in new honeys, owing to the action (which he has already demonstrated in 1879) of the saliva of bees which also transforms cane-sugar into glucose.

Grape-sugar from the syrup was also obtained in a crystallised form. No trace of formic acid could be detected. In the syrup quantities of pollen were found in suspension, determined by Professor C. Cramer to be that of *Protea mellifera*, testifying to the genuineness of the syrup.

Wishing to compare this with the fresh nectar, he succeeded after great difficulty in getting three bottles. The specific gravity was 1·078, 1·079, and 1·077. These contained 17·66 per cent of solids, of which 17·06 is grape-sugar. They contained no cane-sugar. There was not the least trace of formic acid. A comparison of the two shows that the difference was only due to the extra quantity of water contained in the fresh nectar.

Besides these he also examined the nectars of *Hoya carnosa* and *Bignonia radicans*, both in the fresh and evaporated states.

The following table gives the results:—

Nectar of		Solids.	Sugar.	Cane-sugar.	Grape-sugar.
Protea mellifera	fresh	17·66	17·06	0·00	17·06
,, ,,	dry		96·60	0·00	96·60
Hoya carnosa	fresh	40·77	40·64	35·65	4·99
,, ,,	dry		99·68	87·44	12·24
Bignonia radicans	fresh	15·30	15·27	0·43	14·84
,, ,,	dry		99·85	2·85	97·00

Dr. de Planta has also made aqueous extracts of various flowers, amongst others those of *Rhododendron hirsutum* and *Onobrychis sativa*. In order to obtain 1·0 gramme of sugar (equal to 1·3 grammes of honey) the bees must visit at least 2129 flowers of *Rhododendron hirsutum* and 5530 of *Onobrychis sativa*.

As honey is almost entirely formed from nectar, he gives the following table comparing the quantity of water he has found in nectars and also in old and new honeys:—

Nectar of	Nectar.	Water. Old Honey.	Water. New Honey.
Protea mellifera	82·34	—	—
Hoya carnosa	59·23	—	
Bignonia radicans	84·70	—	
Fritillaria imperialis ,,	93·40	—	—
Honey from—			
Department of Landes		19·09	—
Senegal		25·59	—
Melipona		18·84	—
Cant. Grisons (alt. 600 m.)		18·61	21·71
Sainfoin		19·41	—
Cant. Grisons (alt. 1395 m.)		17·52	20·41
,, ,, (high-Alps)			21·68
Buckwheat			33·36
Acacia from Ingoldstadt			29·29

Whereas the nectars vary between 59 and 93 per cent, the quantity of water contained in old honeys only varies between 17 and 21 per cent, and that in new honeys 20 to 21 per cent, with the sole exception of buckwheat honey in which he found 33 per cent.

From these observations he thinks that the bees throw off a considerable quantity of the water, while it is in their stomachs. He does not admit that it is evaporated entirely in the cells for the analyses he has made of honey newly deposited in cells show that it already reaches them considerably concentrated. The following table shows the relative proportions of sugar contained in different honeys:—

	Present.	Quantity formed by Inversion.
A.—Old Honeys.		
From Department of Landes	87·00	1·00
,, Senegal	85·40	3·70
,, Canton Grisons (alt. 600 m.)	80·60	2·70
,, Sainfoin	88·70	0·00
,, Canton Grisons (alt. 1395 m.)	84·10	0·50
B.—New Honeys.		
,, Canton Grisons, Alpine region	81·60	10·60
,, ,, ,, (alt. 600 m.)	81·60	9·30
,, ,, ,, Alpine region	87·20	0·80

Although most of the nectars contain a considerable quantity of cane-sugar, it is found in very few of the honeys of the Alps. Some honeys contain a little, whilst in others it is entirely absent. It is clear that during the formation of honey the cane-sugar in the nectar is converted into grape-sugar by the saliva of the bees, which contains a ferment endowed with this property (see his researches on this subject in the *Deutsche Bienenzeitung*, 1879, No. 12.).

Another difference between honey and nectar consists in the former containing nitrogenous substances and formic acid. Mullenhof has shown how this last is deposited in the honey, and E. Erlenmayer has proved its antiseptic properties.

CALEDONIAN APIARIAN SOCIETY.

Twelfth Session.

The closing meeting of the session was held in McInnes' Temperance Hotel, 12 Hutcheson Street, Glasgow, on Wednesday, October 27, 1886. *Present*—Messrs. William Sword, William McNally, John D. McNally, E. McNally, James Johnstone, William Thomson, John D. Hutcheson, Peter Watson, A. Sweet, G. D. Gordon, William Walker, and R. J. Bennett. On the motion of Mr. Bennett Mr. Sword was called to the chair. The Secretary read the minutes of previous meeting, which were approved, also letters of apology from Messrs. Cameron, Young, Smith, and Richard McNally. The financial statement was then read, showing that the Dumfries Exhibition was a loss to the Society of 17*l.* 2*s.* 7*d.* The Treasurer said this deficit was chiefly owing to the very inclement weather that prevailed during the days of the Show. As the Society was now considerably in debt, it was resolved to write patrons for subscriptions. Mr. E. McNally proposed that a sub-committee be appointed to co-operate with the Treasurer in raising donations towards the prize fund. After some discussion, Mr. E. McNally and Mr. W. Thomson were elected. The prize schedule for the Perth Show was then revised *seriatim*, and passed. Messrs. William McNally and Peter Watson were added to the committee. Mr. Bennett then read the following Apiarian Notes taken in Argyleshire during 1886:—

'In closing my notes for 1885, I said that after a most successful year the bees had been put into winter quarters in splendid condition, and with abundance of stores to tide them over till April. It was well that it was so, as the bees after 13th December were not again on the wing till the 2nd of February, as January, February, and March were the most severe months of frost accompanied by heavy snowstorms which we have had for years. On the 10th of February we had bright sunshine, and the bees came out in swarms, but in less than an hour the snow in front of the hives was strewn with their benumbed bodies. Our man closed all the doors of the hives to a quarter of an inch, carefully gathered up those benumbed, and puttting them all into a straw hive, carried them to the kitchen ffre, when, after a careful toasting, their joyful hum was soon heard. Placing them over the weakest stock, they were made welcome; and, from this date till 20th March, the

bees in all the hives were made prisoners. A thaw set in on the 19th, and on the 20th all were on the wing enjoying a cleansing flight, but they were again prisoners till the 31st of the month.

'April set in well, but on the 10th we had a violent snow-storm, and breeding, which had been induced by stimulative feeding, was suddenly checked. The weather continued bleak and cold till the 23rd, when an examination was made, which showed that two of the hives had neither brood, nor could any eggs be seen, so that we were forced to believe that the queens had become effete and would require to be removed as soon as new queens could be got to supply their places.

'May, during the first eight days, was delightful. Breeding began, and hopes were raised, only to be damped by a succession of rainy days, accompanied by cold, bleak winds, which, with the exception of days of sunshine now and again, continued till the end of the month, During this time, however, the bees were most industrious whenever they could get out, and were constantly bringing in pollen, so that with the stimulative feeding breeding was going on rapidly in all the hives, with the exception of the two previously mentioned, one of which succumbed during the month.

'June commenced with fine days, and again hopes were raised, but on the 10th a violent thunderstorm came, accompanied with very heavy rain. From the 12th till the end of the month the weather was lovely, stocks rose rapidly, we had four swarms, and, although we had no stocks in supers, they had all gained weight. As the clover was now bursting into flower, we had great hopes of supers being filled next month.

'July set in well, but as swarming was not yet over, we had few hives ready for supering till the middle of the month. On the 26th I arrived at Dumfries, and proceeded direct to the Highland and Agricultural Society's show-yard, where I was astonished with the display of beautiful honey from Wigtonshire, Dumfriesshire, and Ayrshire. On the 29th I proceeded to London in order to see the South Kensington Bee Show held under the auspices of the British Bee-Keepers' Association. As there were 250 exhibitors, and over 350 entries, this was the finest exhibit and display of honey ever seen in our country. It was so staged and arranged with backgrounds of blue, silver, marone, gold, &c., as to give effect to the different stalls, according to the tastes of exhibitors from the various counties, who had come from all parts of the country to see and also take part in the Show, which was such a success that it was the topic of conversation by one and all.

'August began well, and the bees having been all removed to the heather, hopes were again raised that a heather honey harvest would be seemed, but, alas! like July, before the middle of the month the weather had broken, heavy rains and cold nights setting in, so that the bees quickly carried down from the supers any honey they had stored there in the earlier part of the month.

'September, like August, was cold and bleak. The rains had completely spoiled the heather, and by the end of the month supers had been abandoned. Some bee-keepers, who had taken their hives a distance of eighty miles to the heather on 1st August, were much disappointed to find them seven, ten, or fifteen pounds less than when they left them.

'About the middle of the month forty tons of honey came from Canada, and four gentlemen were delegated by the Ontario Bee-keepers' Association to see to the whole exhibit being properly staged in the Canadian Court and disposed of at the close of the Exhibition. Over fifteen tons of this was fine clover honey in the comb, and it was so beautifully packed that it came all that distance with very few breakages.

'In October, hives were put into winter quarters; those that were weak were fed and strengthened, and from the twelve hives not a single pound of honey was taken, deeming it advisable to let them keep all that they had made. This year, 1886, will be long remembered in my district as a blank year, such a complete failure I have never either seen or heard of. This month, like its predecessors, has been cold and bleak, with heavy rains; but on the 23rd we had a fine day with brilliant sunshine, very warm, and the bees were busy carrying in pollen. Now that they have gone into winter quarters well stocked and with abundance of supplies and young queens, let us hope they will have a year of plenty in 1887.'

The Secretary read the following apiarian notes which he had received from Mr. Richard McNally, Glenluce, Wigtonshire:—

'I began the season with twenty-five stocks. These were removed five miles in early spring, which, I think, hurt them, owing to the frost having set in, which kept the bees from getting a cleansing flight. On the 1st April, on examination, I found eighteen strong and seven weak. These I united, and made all into twenty-two stocks. From the twenty-two I have taken 450 lbs. of extracted honey, 340 lbs. of comb honey, and six swarms of bees—on an average, fully 35 lbs. of honey per hive. I have to remark that all my honey gathered in this district granulates very quickly after being extracted. Most of my honey gets candied in forty-eight hours after leaving the comb. I have no trees of any kind, but plenty of bloom along sea-beach the whole year round.'

After a vote of thanks to Mr. Bennett and Mr. M'Nally for bringing their notes, and to Mr. Sword for presiding, the meeting separated.

Correspondence.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SIZE OF FRAMES.

[700.] In the issue for November 18th, p. 534, your esteemed contributor, the writer of 'Useful Hints,' touches upon a matter of extreme importance—the size of brood frames. He says, 'Signs of dissatisfaction with the present Standard frame are not wanting,' and presently suggests a frame as a second Standard to be 16″ × 9½″. A frame of that size, however, would necessitate a hive of quite a different gauge. Before the present Standard came into use, my frames were 16″ × 10″; but since adopting the Association size, I have been quite unable to build up so fast in spring as I did with the larger one. I have, therefore, endeavoured to correct this mistake, and now use a frame 14″ × 14″ in the *same* hive that the present 'Standard' can be worked. Thus a way is opened for the gradual but certain extinction of the present frame, without inconvenience to the bee-keeper.

For extracting, a shallow super is used; and it would be for the large frame and its accompanying super-frame for extracting that I would suggest the distinction as Nos. 1 and 2; the present Standard to be No. 3, as sooner or later it will be discarded.

A deep comb ensures that the stores shall be placed compactly in the best possible position within reach of the cluster, hence greater safety in wintering; and in spring the brood-nest—I do not say 'will be,' because I have seen in a large number of cases *that it is* spread out to a much larger extent, in the proportion of three to two as compared with the Standard size. A given quantity of bees, which would lose heat by commencing to breed on another comb in the present frame, would find the heat so economised in the deeper frame that the margin of the cluster may be continually extended to cover more brood in the same seam. Herein lies the 'pith' of the whole question; and as more bees at the right time means more honey, who can object to adopt the frame that does it?

With the deep frame no brood-spreading is necessary;

one frame to move in place of two; and in other ways much less handling of the frames is needed.

The Standard hive of two storeys does not give the same advantage of brood-production at the most important time; neither does that arrangement in winter afford a proper disposition of stores, as it gives a space too large, too deep, and is broken at the centre. The latter objection is not of much importance with a shallower frame in two storeys, though this is not equal to the large unbroken comb, for securing a vast population in spring.

As a single frame, therefore, the present Standard is too shallow; for storifying it is too deep; but considering the large number who are at present using it, the discussion likely to ensue may be sharp and bitter. All the same, I do not see that any one will find much fault with an arrangement permitting the use of both frames in the same hive, so that each may decide for himself, and, whichever he refuses, a suitable hive still remains, which wants no alteration.

As to the shallow extracting super, which some of our best men have long used, there ought to be no difficulty in deciding upon the size, though that may be considered of no more importance than the various sizes of sections. We have the writer of 'Useful Hints,' who has long known of the advantages of a larger frame; Mr. Hewitt, of Sheffield, prefers a deeper one; and other correspondents to the *Journal*, have told of much better results from frames about 14" deep: one going so far as to say that his frames of that depth *always* gave him most honey. How many more are there for or against?

The objection to an alteration is met by the fact that the frame I have adopted (14" × 14") can be used in one and the same hive that takes the present Standard. This does not imply that the new frame can be used only in my own hives, but also in most of the Standard hives in present use.

Should there appear to be a general desire for a larger frame, I may at some future date describe the hive I have adopted, enabling me to use both a larger and a smaller frame than the Standard, with the advantages of both united.—S. Simmins.

THE 1¾-INCH SECTIONS WITHOUT SEPARATORS.

[701.] I have to thank Mr. McKnight for his reply to my letter in your issue of 4th of November, 'That though separators were in general use in Canada they had not been used in the production of nine-tenths of the sections at the Colonial Exhibition.' Again, 'That satisfactorily finished sections may be obtained without them by a skilful manipulator when favoured with a good location and a rapid honey flow;' and 'Amateur Expert,' writing same *Journal* and of same sections, formed as they were without separators, says, 'Better than which eyes never need wish to look upon.' All this points to a great improvement that can be effected in the appearance of our sections by dispensing with the use of separators. All that seems necessary is a good location.

We generally have a rapid honey flow of a few weeks' duration, and skilful manipulation is acquired by practice. Having, therefore, the requisites, or being able to acquire them, it behoves us to put them in practice and secure the results. Our thanks, here, are also due to 'Amateur Expert' for his kindly mention of the Emerald Isle and sympathy with Erin in her troubles. Does 'A. E.' think or know that many of these troubles proceed from the sections one contains, or some of them being placed too far apart from each other?

I am not now thinking of separators, or the advisability of retaining or dispensing with them, that might be deemed political ground with which the bee-keeper has nothing to do, but that there are bee-spaces, too many, between section and section, class and class; and that those spaces are only widening to the disfigurement of each section and disparagement of the hive, I fear is only too evident, and that which all must admit. I fear, also, such a state of things, with only some slight changes, will last till the Head Bee-master comes to rearrange his sections and sweep away the separators and dividers once and for ever; and then, and not till then, will the bee-keeper's work be finished in Ireland.

Away up in the North of Scotland the little bees at the heather work shoulder to shoulder, hence such grand results, and down here South, especially where separators are dispensed with, they work *dos-à-dos*, backing one another out in all their undertakings. The Lady President of the B.B.K.A. at the last annual meeting observed, 'That the only industry that seemed to prosper in Ireland was bee-keeping;' and a friend lately observed to me that we were like Freemasons. That is just it; when bee-keepers meet together separators are abolished, the bee-space reduced to an invisible minimum, and each is ready to place shoulder to shoulder, or back out the other, for the individual or the common interest, and that is why bee-keeping prospers in Ireland. The field for the development of her flora is now becoming so extensive, through the land passing into meadow grass, that could we only get many to join the ranks, combat successfully the separators of ignorance, prejudice, and superstition, which divide the skep from the bar-frame; and were the climate as answerable for the secretion and gathering of the nectar as it has been these last three seasons, we might enter the lists with Canada in hopes of becoming, like Ontario, a land of milk and, in the words of one of her own poets, of honey so sweet that even a taste of it would in Canada be considered a treat. I hope such a time may come about.

Mr. Bellairs (see *Journal* 11th inst.) seems to think a pound of honey spread over a large surface would have greater powers of resistance to a knock *en voyage* than one of smaller dimensions. I fail to see it. Those sections from Canada came over safely, for the packers were very clever, and they, or their superintendents, travelled over with them.

There is one point in which the 1¾-inch section is superior to the 1⅞-inch wide; the latter, as far as I know, cannot be worked without excluder-zinc to keep the queen down, the former can. When drawn out it cannot be made use of by the queen, and if placed in racks immediately over the frames and centre of hive she is effectually prevented coming up. My small experience goes to say that from a hive storified with sections as much ripe honey can be taken as from one tiered up with frames, when the sections are the 1¾-inch without separators. An inferior stock last year gave as much in 1¾-inch sections as if extracted would equal my best tiered-up extracting stock of this season, viz., a little over 100 lbs. The seasons were different, but so were the stocks.—W. B., *Patrickswell, Co. Limerick.*

BUMPING.

[702.] The subject of bumping *v.* driving has again cropped up in your columns. As the original 'bumpist,' as one of your correspondents suggests that the admirers of the plan should be called, I am gratified that the plan which I suggested in 1884, and which was received with much incredulity of its success, has now become recognised as a standard method of procedure. With your permission I will endeavour to reconcile the conflicting opinions recently expressed.

'Drone' has been sufficiently worried by the workers, but none of them have exactly touched upon the cause of his disaster. He says he reached home with his bees, and without more ado tried bumping. A little consideration would have shown him that the confinement and excitement had so raised the temperature that the

combs were quite tender from heat, and had he performed the operation in the proper manner, which he did not, they would still have broken anywhere but where he wished. I am rather surprised that you have not had more records of failure this year. Their absence must be owing to good judgment on the part of would-be 'bumpists' in not attempting the plan on hot autumn days. I have a vivid recollection, shared, I am sure, by a brother chip who accompanied me to see how it was done, of August 31st and September 1st, when the thermometer stood, and so did we, in the sun, at some fabulous degrees. Bumping was entirely out of the question, the combs so soft as not to bear handling except in the case of a few casts where the skeps were not half filled. When the weather is hot and the combs tender never attempt to bump.

'Trevor Saynor' (678), 'A Newbury Bee-keeper' (680), and 'Welsh Novice,' all speak of the combs breaking out not at the top of the hive, but some little distance down. While Mr. Dobbie, who is such an acute observer that he would doubtless have mentioned it had it occurred, is silent, and has nothing but praise for 'bumping.' I wish Mr. Dobbie would himself coin a word, say a compound of bumping and brushing, or their equivalents, on the principle of 'Colind.' As I have never experienced this difficulty, except in a few instances where the crown of the skep has sunk, and the combs have been attached to the floor-boards and become broken in wrenching up, obviously not a defect of the system, I am inclined to think the fault lies in the *direction* of the blow. The arrow in the illustration, p. 311, gives the correct direction, which is at right angles to the faces of the combs, and the weight of the honey at the *bottom*, as held for the blow, carries them straight forward, and so they break off close. Now, if the skep is held at the same angle, as shown in the illustration, and brought down *vertically* on the ×, the combs, following the direction of the blow, will topple over, and the fracture will not be so clean nor so near the edges of attachment. As to the satisfaction given by bumping to the bee-owners, I can only say that in a certain district visited by me every year for nine years my 'clients' increase every year. This year I have had to visit no less than eleven previously unknown bee-keepers from recommendations from others. The word is: 'Mr. (or Mrs.) So and so, just over the hill' (N.B.—'just over the hill' generally means a drive of about three miles) 'asked me to send you there to take the bees when you come to me;' and I generally find that the plan I adopt is well known, as the pans to receive the combs are brought out at once. Nevertheless, it is always as well to explain the two methods, driving and bumping, and ask whether it is preferred that the combs should be left in the hive 'or shall I take them out for you?' This is the way I put it, and the answer is almost universally, 'Yes, please, if not troubling you too much.'

One very great recommendation of the bumping process is the ease with which every bee can be cleared from the combs. It is exceedingly rare to be able to clear every bee out of a skep by driving. I have done it, but generally one has to call the job finished when a few obstinate ones are busy below. The main objection I find to having bees taken at all is that by smotheration no bees are taken indoors with the combs, and the fewer we can leave with them the more welcome we shall be another year. I have tried carbolic acid this year with considerable satisfaction. One plan which I find useful when the bees are inclined to defend their property too acutely is to hang a piece of canvas, damped with solution of carbolic acid, over the floor-board, holding the corners so that as you turn up the skep the canvas falls over the open mouth, keeping the bees down while you fix your other skep (if driving). To get the bees to cluster rapidly, after separating them from their combs, brush the whole of the floor-board over with carbolic acid solution, and prop up the skep in front with sticks as high as you do the upper skep in driving. The floor being so unpleasant they would not linger on it, but at once ascend and join the cluster. As to the carbolic fumigator, I do not feel altogether inclined to rely upon it. The smell of the acid will drive bees from point to point, but when I had one and no smoker, I missed the responsive roar which follows a good cloud of smoke, and also the convenience of being able to surround my head with a cloud and disperse too attentive satellites.—F. Lyon.

SCOTTISH BEE-KEEPING.

[703.] As one of the original contributors of the *British Bee Journal*, I sometimes while away a leisure hour cutting up and reading some half-dozen of its latest issues, and on a recent occasion was more than astonished at what I came across.

All honour to the British Bee-keepers' Association for extending a hearty welcome to our Canadian brethren and their forty tons of honey; but in an Association numbering 10,000 strong, the lack of British pluck in describing our own progress was something deplorable, and the amount of toadying to the tall talk from across the Atlantic rather sickening. The only voice seemingly raised, to his credit be it spoken, was that of our late Editor, Mr. C. N. Abbott, by whose unaided enterprise this periodical was established, and through its columns the Association formed.

Mr. William Raitt, described as 'Secretary to the Edinburgh Association,' a Society unknown in these parts, was said to represent Scotland. If so, his patriotism and the bee-keeping history of his country were unfortunately left behind, as the following passage shows, page 497: 'He' (Mr. Raitt) 'thought it unlikely that they in England could be much in advance of their Canadian friends, because nearly all the systems and appliances in vogue in the old country were borrowed from the United States'! Is this really so?

'*They in England*' know best. A word for Scotland. As the fat boy in *Pickwick* said, 'worser than that' was to follow. Rev. G. Raynor 'endorsed Mr. Raitt's remarks,' and added, 'In some instances the American inventions had been improved upon by Englishmen, as in the case of the Stewarton hive'! Bravo! and doubtless the band played up 'Yankee Doodle.' The records of the Royal Society abundantly prove the storifying system *was used with success in Scotland prior to* 1673; it is so still. Pray who in America invented it before then? Why, 213 years ago the Pilgrim Fathers had not left our shores; or was it the Red Indians?—had even they then heard in their primeval forests the first hum of the pioneer of civilisation, afterwards beautifully dubbed by them 'the white man's fly?'

After nearly thirty years' advocacy, by the present writer, of the value of the storifying principle, it made little headway in the South: even the magnificent supers of the Crystal Palace Show, 1874, being Scotch, failed to convince. But no sooner did our 'cute Yankee cousins at last see and admit the principle—inventing what?—the word *Tiering*, an Americanism, it was as a matter of course adopted about Blairgowrie: and now, when our 'auld ewe in lamb fashion,' nicely squared and branded 'Heddon,' has crossed the Atlantic, it will now become the rage down South.

It is now twenty-four years since that very useful German invention, the 'embossed wax-sheet,' was sent me for an opinion by 'A Devonshire Bee-keeper,' from the London Exhibition of 1862, and that same year 'A Lanarkshire Bee-keeper' from a sheet sent him by Messrs. George Neighbour & Sons, most ingeniously perfected a machine, and threw off the first sheet made in Britain. Honour to whom honour. Shortly thereafter I was in

possession of a Scotch-made machine, and the wax-sheet became an indispensable ever since. 'History repeats itself.' The Southerners were taught its value at the Crystal Palace Show, but not till the Americans took it up and invented the word 'comb-foundation'—serving us up 'cauld kail het again'—was it universally adopted in the South. That budding bee-keeper, Mr. John Douglas M'Nally, and the answerer of 'Coffin Dick's' query, will obtain a little useful information there anent by referring to Vol. II., page 171.

My useful upward ventilator, 'India matting,' was adopted by the Rev. L. L. Langstroth, and again we have it transmogrified into the 'Quilt,' under which we'll allow American inventive genius meantime to fall asleep. —A Renfrewshire Bee-keeper.

[We have received a letter signed 'Renfrewshire Stewarton,' conveying similar sentiments to the above. We are pleased once more to recognise the Roman hand of our esteemed contributor, 'A Renfrewshire Bee-keeper,' and could wish that his communications to us were more frequent. We assure him and 'Stewarton' that it has been a great pleasure to us Southerners to have the presence of so true a Scotchman and so distinguished a bee-keeper as Mr. Raitt at the meetings of British and Canadian bee-keepers. There was nothing in any of the utterances of Mr. Raitt that could possibly be construed as 'unpatriotic'—the term applied by 'Stewarton'; he exhibited in a high degree all the *perfervidum ingenium Scotorum*, upholding Scotch honey, Scotch bee-keepers, and Scotch bee-keeping, on every occasion, both in public and in private. Ed.]

JOTTINGS FOR OUR *JOURNAL*.

[701.] I think the following will account for weeping sections: given a warm day, sections are taken off the hive, placed on a board or dish and taken into a cool part of the house, such as the pantry, dairy, or in some cases into the cellar with the almost inevitable result of innumerable cracks in the sealing caused by the contraction of the thin scales of wax that cover the honey consequent on the sudden change in temperature. The cracks, though minute, admit air, and then the honey, becoming thin by the action of the air and the humidity of the atmosphere, oozes out spoiling the appearance of the honey.

I have also noticed that sections that have travelled long distances by rail frequently weep afterwards, no doubt the sealing is cracked in that case by the tremor or jar of the train; but sections that are glazed before the journey, stand the shake and tremor of railway travelling far better than those not glazed, and are protected from the action of the air: in fact, if well glazed they are hermetically sealed and proof against the changes of the atmosphere.

Then with regard to the alteration in the thickness of the sections, let us remember Talleyrand's injunction as to too much zeal; don't let us rush after and into everything that is new or be carried about here and there by every wind that blows. Why should we imitate the Canadian shape and size section? Why, indeed? is our English honey such poor stuff that it requires a Canadian cloak wrapped round it before it is saleable: I say, No, it does not. I say, and I maintain without fear of contradiction, that the honey produced in the British Isles is second to none in the whole world, then why imitate and use the same size section as our Canadian friends? And again, how long have the Canadians used these so-called natural combs of the thickness of brood combs: only a short time (let those who advocate the size as the *natural*, open a bee-nest where the bees have built of their own sweet will and to their own instinct, and they will find the store combs thicker than the brood combs).

And now a word as to the 'Heddon' hive, let us proceed in adopting it with caution. I myself intend giving it a fair trial beside the 'Combination' and the 'Woodbury;' and if I find it equals either I may work a few, but I would submit the 'Heddon' is a summer hive, and the 'Combination' an 'all-the-year-round hive.' Don't let us forget, that to be successful in bee-keeping we want to winter our bees well or our success in summer will be very limited. How would the thin single wall 'Heddon' hive stand the last fortnight's continual downpour of rain? I made the remark to Mr. Jones at the Colonial Exhibition: 'How would you protect the hive in winter?' 'Oh!' he said, 'protect it with old cases or bind it with straw bands.' My mind wandered to the straw-bound pump with the icicle hanging from spout to cistern, and I fancied to myself how my apiary would look with say fifty straw-bound 'Heddon' hives in it. Then there would be the unwinding in the spring, or would the sun and wind have the same slackening influence on the straw ropes around the hives as the 'Davenport Brothers' used to exert on the hempen ropes; if so, it would save a lot of labour, as the bands would drop around the hive in spring ready to be packed up in a hank or coil.

May I add a word for the poor toad? Mr. Walton says the toad stands on its hind feet (pray were those the toes he says he cut off?), and reaches the entrance of the hives, opens and shuts his mouth—smacks his lips no doubt in anticipation of the dainty morsel—which alarms the bees who run straight into the yawning, cavernous mouth of the toad. Poor toad! surely his sepulchral throat must be very sore and swollen next day with internal stings, or do the eyes of the toad fascinate the bees in the dark and render them powerless to use their only weapon of defence, to avert such disasters? I advise bee-keepers to elevate their hives out of the reach of toads. The toad is blamed for picking up bees that fail to reach the alighting-board: I don't question the assertion, but would advise bee-keepers to do as I do, place a slanting board the width of alighting-board one end on the ground and the other resting on edge of alighting-board, thereby giving laden bees, tired and fagged with a long journey, a chance of reaching their *dulce domum*. Anyone who has taken the trouble to notice and investigate the matter knows that many bees in spring are lost when most needed by falling on the ground and becoming chilled, when by adopting the slanting boards they are enabled to reach home out of reach of chills and toads.—W. Woodley.

THE SEASON OF 1886 IN EAST YORKSHIRE.

[705.] Mr. Grimshaw's cry of 'York, you're wanted,' not having elicited any response from members of the Yorkshire Bee-keepers' Association, perhaps you, Mr. Editor, will allow me to make a few remarks on the season of 1886 as experienced in this neighbourhood, and more especially in regard to my own apiary. I related in the *Journal* my having wintered over forty stocks with scarcely any loss, that the winter had been most protracted, and that the ground was then (15th March) deeply covered with snow. Well, if the winter had been a trying one for the bees, what shall I say of the spring? that it was very much more so, for it lasted almost to midsummer; and it was not alone trying to the bees, but also to their keeper, for feeding, and with strong colonies, liberal feeding became absolutely necessary to prevent starvation and drawing of brood. However there was no help for it, it became simply a matter of keeping or losing them, and I kept the bottles going, hoping almost against hope, as week after week passed away with no change in the weather for the better. And never was there a season in which the wisdom of keeping up the full strength of colonies was more decisively verified than this, for every one of them did well and gave a large surplus, whilst all over the district I heard of losses and bad results. But it is a long lane without a turning, and on the 24th June we at last got a change, the weather being warmer, and on the follow-

ing day decidedly warmer, and from that day onward we had grand weather, the hives and sections being filled more rapidly than I ever remember. One instance will show what bees can do under favourable conditions.

A rather small swarm from a skep came off on the 27th June, which I hived on six sheets of wired foundation; examined before breakfast on the morning of 1st July and found all built out and nearly all stored with honey, so great indeed was the weight of honey and so tender the combs that in removing the dummy one of them gave way and fell out of the frame; gave more sheets of foundation and examined again in a few days, found all built out and stored, the beautifully white combs all the length of the hive being quite a sight. Well, the fine weather still continued, and the clover, though late, came into grand bloom, and I confess my bees fairly beat me; I could not give sections quick enough, every rack and doubling-box I had was called into requisition, and the hives were literally crammed with bees and honey.

One of Abbott's Combination hives with bars the full length, two crates each of twenty-one 1-lb. sections not being nearly large enough to hold the bees, the whole front of the hive being covered, besides almost a swarm hanging below the alighting-board. At a rough guess I estimated the weight of honey gathered by this hive at nearly 200lbs.

After twelve days of glorious weather a change came, rain fell and so did the thermometer, and as most of the meadows had in the meantime got cut the season was apparently over; but only apparently, for after about a week of bad weather the sky cleared, the sun broke out again, bringing a rise of temperature, and as much of the clover had never bloomed in the meadows, the 'fogs' or after-growth became white over with clover, and sections again began to be filled and others sealed, but after a few very fine days and some more or less favourable ones we had another break, the glass went down to 60°, and the bees gave up work, though the clover was still in good bloom.

I never remember the white clover to continue in flower so long as during the season just passed; hundreds of acres were in full bloom in September; in fact, flowers of all kinds were exceptionally late, I saw fields of beans in full bloom in August, the scent from them being very fine.

Altogether the season of 1886 has been most exceptional here. The long winter, followed by a dreadfully cold and wet spring—so much was this latter the case that most of the summer birds perished, swallows, &c., being found dead in barns and outhouses by scores. Then, again, there was no blossom on the apple-trees, and very little on the whitethorns; whilst during the time the sycamores were in bloom the weather was too bad for the bees to get at it. Yet, notwithstanding all these drawbacks, those stocks which were able to pull through and keep up their strength did wonders, and so far as my own bees are concerned it has been one of the best seasons for many years.

Such is a report of my own doings at Beverley, but not satisfied with them I sent off, on the 12th August, thirty of my best hives to the moors, and with the Editor's permission will report their results in a future number of the *Journal*. — F. Boyes, *Beverley, East Yorkshire.*

Reviews.

The Illustrated Australasian Bee Manual, and Complete Guide to Modern Bee-keeping in the Southern Hemisphere, by Isaac Hopkins, Matamata, Auckland, N.Z., assisted by T. J. Mulvany, Bay View Apiary, Katikati.—1886. We are glad to find that the progress made in bee-culture in the Southern hemisphere has been so rapid as to require a third edition of this manual since the first one was published in 1881. That was a small book of 150 pages, whereas this one contains 350, is got up very much in the style of Cook's Manual, and is a compilation of much of the recent knowledge on the subject most suitable to the climate of the Australian Colonies. In the preface the author says, 'In the interval since the issue of the first edition, bee-culture has taken an established footing in New Zealand and the Australian Colonies, the suitability of the climate and the flora being no longer a matter for speculation but one of experience.' After giving an historical introduction to the subject, he devotes a chapter to a description of the honey-bee and its varieties, their geographical distribution, and their introduction into the Colonies. In describing the practical part of apiculture, he gives the practice followed by himself, and being the manager of the Matamata Apiaries he is able to speak from considerable personal experience. On many of these practical points Mr. Hopkins states that beginners in the Colonies could not find reliable guides in any of the European or American works, all of which had their origin in places situate in comparatively high latitudes, where the conditions of climate and the flora tend to place the practice of bee-keeping in many respects upon different principles. Mr. Hopkins has given the best information at his command, but the natural history and anatomy of the bee would have been much more reliable and complete if the more recent German works, such as those of Schiementz, Wolff, and others, had been consulted. There ought not to have been any doubt as to the use of the contrivance on the anterior leg of the bee, figured and described by William Kirby in his *Monographia Apum Angliæ*, so far back as 1802, fully described by Shuckard in 1866 in his *British Bees*, and also described in the *British Bee Journal*, page 370, 1885, and on page 44, 1886, with illustrations. There can be no doubt that it is used for cleaning the antennæ and for no other purpose, as in the many varieties of bees which we have examined under the microscope we have invariably found the notch to exactly correspond with the size of the antennæ. Some of the German works would also have settled other doubtful points mentioned in the book, more particularly those respecting bee diseases. The author, in supplying a chapter on apiculture in connexion with agriculture, which he treats in a very interesting manner, has introduced a novel feature not yet found in other works. In these days of literary plagiarism it is quite delightful to find that the author does not claim to have been the discoverer of the habits of the bee, which he so well describes, but not only quotes largely from the numerous writers on the subject, but also gives his authorities. We congratulate Mr. Hopkins on this addition to our bee literature, wish it every success, and do not doubt but that it will be useful and help to further advance bee-keeping in our Colonies.

A Bird's-eye View of Bee-keeping, by William F. Clarke, published by Jones, Macpherson, & Co., Beeton, Canada. We were very much amused and pleased in reading this little book. The elementary principles of the art of bee-keeping are here contained, we may say, in a nutshell, for it consists of only sixty pages, and we are agreeably surprised to find that the author has been able to give so much general information, and in so pleasant a manner in so small a space. Mr. Clarke is well known both in Canada and the United States as an able writer, and as one of the former editors of the *American Bee Journal*. Instead of prose the author has taken to poetry, although we are sure he will excuse us if we point out that he is not the first by any means who has done so. In the preface he says, 'Not since the days of Virgil, whose Georgics are still classical reading, has there been, so far as I know, any poetry of bee-keeping, with the exception of occasional allusions in general literature,' and

on page 56, 'So far as I have used choice in the matter, two considerations have more particularly influenced me. 1. That of novelty, which might be a feature of interest; and, 2nd, the thought that, in this form, I should not encroach on the ground of any other author, but have the field all to myself.' In 1799 A. Murphy published his book entitled *The Bees: A Poem from the fourteenth book of Vanière's Prædium Rusticum.* In 1806 John Evans, M.D., published the masterpiece called *The Bees; A Poem in Four Books:* and in 1872 appeared *Buzz a Buzz* by that veteran bee-keeper W. C. Cotton.

This does not, however, detract from the merit of Mr. Clarke's book. It is full of practical hints. For instance, he addresses would-be bee-keepers on page 8 in these terms:—

'Read, ponder well, and seriously ask
If you are fit to undertake the task
Of keeping bees, if you indeed possess
Qualification to secure success.
To be a skilful bee-keeper, you ought
To know that you must mainly be self-taught.
Experience is a most expensive school,
But he who shirks it will remain a fool.'

Then, as regards the suitability of bee-keeping for ladies, on page 11 he says:—

'Some say that ladies ought to let alone
This occupation, although we must own
That many lady apiculturists
Have won high fame upon the honour lists.
Good Mrs. Harrison, of Illinois,
Keeps bees, makes bread, preserves, and bumpkin-pie.
"Cynla Linswick," whose right name few know,
Mrs. McKechnie, of Ontario,
Mrs. Cass Robinson, of Indiana,
Both handle bees and play on the piano.
A lady's hand, with its soft gentle touch,
To bee-controlling is adapted much,
Even her oft-persistent wilfulness
Gives her a faculty to win success.'

With respect to the Heddon hive, the working of which he fully explains, he says on page 14:—

'Adopt the kind of hive you mean to use,
Their name is "legion," from them you must choose.
So take advice, I freely give it you,
The best thing, in my judgment, you can do,
Is to adopt the new style Heddon hive,
If you would at complete success arrive.'

Beginners are advised in the following words on page 32:—

'Beginners, I advise to raise comb honey
Until they scrape together enough money
To purchase an extractor, pails, and things,
Necessity for which extracting brings.'

The mania for improvements is alluded to on page 50 as follows:—

'Do not suppose a tyro can contrive
A better than the best-built modern hive.
Of all the follies novices commit,
Inventing hives is the most silly fit.
Be not misled by gimcracks or moth-traps,
Or you will have no end of sad mishaps.
Be guided by the long experience wise
Of those who studied the hive's mysteries
Long ere you thought of being a bee-keeper,
Else you, o'er "blasted hopes," will be a weeper.'

He advises bee-keepers, on page 51, to attend conventions and to—

'Write for bee-journals, and if you can say
A word to help another on his way,
By tongue or pen, be "ready aye" to do it.
And rest assured that you will never rue it.
Make channels for the streams of useful thought.
Wisdom, though it be often dearly bought,
Should freely flow o'er all the desert ground,
Until the wilderness with fruit abound.
It is not well, hot, hasty feuds to rush on,
But do not be afraid of free discussion.
Be courteous always, chicken-hearted never,
And learn the truth from passion far to sever.'

These extracts will give an idea of the book and the style in which it is written. We recommend it to our readers, knowing that many will derive pleasure in perusing its pages who would find an ordinary manual dry reading.

Die Feinde der Biene, im Thier und Pflanzerreiche. By Dr. W. Hess. This will be found a very useful book to those who wish to know something about the enemies and diseases of bees, and how to provide against their ravages. Truly, Dr. Hess says, that when bees fly from flower to flower, collecting honey and pollen, and in this manner render man great service, they run many risks. Many enemies belonging to the animal world pursue and devour them. Some whilst they are on the wing, others when they are collecting on the flowers, and wasps and hornets carry them away to feed their young. Besides these there are parasites which feed on their bodies, and suck their juices, sometimes producing death. Spiders spin their webs and destroy many, whilst others attack the honey or lay eggs in the hive, from which are produced grubs that destroy the brood; and, lastly, bacteria, which are supposed to produce infectious diseases, sometimes completely demolishing the colony. The author thinks that bee-keeping has attained such grand dimensions that it is important that bee-keepers should now turn their attention to protecting the lives of their bees. All the known enemies amongst birds and other animals are described, and many illustrated. The more common insect parasites are not omitted, and their life histories carefully traced. *Phora incrassata*, first discovered by Dr. Assmus in hives, and supposed by him to be the first cause of foul brood, has a good deal of space devoted to it, and its connexion with the disease explained. One of the most interesting portions of the book is that treating on micro-organisms which are connected with diseases in bees. Although this is not so fully treated as it is in the work of Dr. Assmus, still there is a great deal of useful information as to what is known at the present time in connexion with these diseases. German scientists have gone more deeply into this subject than is generally supposed, and it would tend to the advancement of bee-keeping in this country if their works were more frequently studied. Several pages are devoted to *Mucor mellitophorus*, discovered by Dr. Dönhoff, and described by Professor Hoffman in *Hedwigia, Notizblatt für kryptogamische Studien.* Dr. Dönhoff was able to prove the contagious character of the disease which exists when this micro-organism is present by feeding bees with honey and water in which the chyle-stomach of one of the diseased bees had been placed. On the fifteenth day he found upon dissecting the other bees of this colony that their chyle-stomach was filled with the spores. The disease also long known as 'Maikrankheit' in Germany is attributed to *Mucor mucedo*, and was named by Professor Münter 'Mucorine.' The book contains 106 pages of closely-printed matter, and very much more is described than we have been able to touch upon, giving as we do but a brief outline of the work. Dr. W. Hess is Professor in the 'Königliche Hochschule, in Hanover,' and bee-keepers are indebted to him for this valuable compilation, which we recommend to our readers understanding the German language.

The Bee-keeper's Alphabet.—By Rev. Charles Anderson, Hon. Secretary of the Somersetshire B. K. A. (Simpkin, Marshall, & Co. Price, One Shilling.)—This little work consists of a series of spirited engravings illustrating the alphabet, with letterpress descriptions: as A for Apiary; B for Bar-frame hives; C for Cells, and so on to Z, Zig-zag entrances. The engravings are considerably above the average of such productions, and are

evidently the result of one who works with a facile pen and who writes with a full knowledge of the present condition of bee-keeping. We were much pleased some years ago at a Show in the West of England to inspect and admire these illustrations, and we then considered them well worthy of being presented to the public in a more permanent form. The *Alphabet* would make a very pleasant and useful present to young bee-keepers. We hope it will have a large and a remunerative sale, and take a prominent place in the literature of bee-keeping.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

W. H. A.—*Bingham Smoker.*—You ought to be able to get a genuine Bingham smoker from some of the dealers advertising in our columns. The faults you complain of do not exist in the genuine smokers, but are frequently found in the imitations. We shall be pleased to give drawings and a description of how to make a smoker during the winter months.

J. B.—*Winter Treatment.*—It is late for queens to be laying, but it is probably owing to the mildness of the season. Our hives that have been doubled and storified have been breeding so late that the number of frames have not yet been reduced, as the hives are too crowded with bees. On the 13th of November there were still newly laid eggs in a hive examined, and a large quantity of hatching brood. You must keep your bees warm, and not examine them again. Much more harm than good is done by interfering with bees at this time of the year. We do not recommend you to follow the advice given you unless you are prepared to lose your bees. Leave experimenting to older bee-keepers, and follow carefully the instruction given in the *Guide-book*.

R. W.—*Increasing Stocks.*—When the spring arrives get your two best stocks into good strong condition; give one of them a frame containing drone comb in the centre of the brood-nest. When drone-brood is sealed and the weather is favourable, divide your other stock and promote the production of queen-cells. Make up nuclei with the queen-cells you get, and when the queens are fertilised divide your other stocks and give queens. Thus you lose no time by stocks being eggless for the necessary time between division and the queen becoming fertilised.

Welsh Novice.—See letter on Bumping, p. 546.

Morning Cloud.—*Making up Nuclei.*—The bees which return are the old ones. You should shake off plenty of bees from combs of hatching brood, and the brood you put in the nuclei should be hatching. You will thus have plenty of young bees which will remain.

D. B. S.—*Removing Bees.*—You may remove bees any short distance in winter when they are not flying. It is as well to place a board or a sheet of glass on the flight-board, leaning against the front of the hive to call attention and make them mark the new position on the first warm day when they fly, or a few may return to the old place.

E. A. Fry.—*Hive-making.*—In *Cowan's Guide-book*, pages 30–35, you will find full particulars as to size and dimensions of the Cowan Hive; and in former numbers sufficient information has been given to enable any amateur able to handle a hammer and a saw to make a hive.

J. C.—1. *Anglo-Cyprian Hives.*—This hive, otherwise known as the Diamond Hive, has been tried and found to offer no advantage over the ordinary frame-hive and to have certain disadvantages. It has thus never come into general use. 2. *Cyprian Bees.*—These are considered by many bee-keepers superior to Ligurians, but the difficulty of handling them and their pugnacity when once aroused are against them, except in experienced hands. 3. *Light Skeps.*—Candy is the only food which you can give at the present season. 4. Mr. Cowan, in his pamphlet on *Doubling and Storifying*, has given the information how 1360 lbs. of honey were gathered by the bees of seven hives in one season.

C. P.—1. *Honey from Limes.*—This is always rather dark. We do not know that that gathered in the neighbourhood of towns is necessarily darker than in the country, but, perhaps, a smoky atmosphere may spoil the colour to some extent. 2. *Propolis.*—There is no reason why the proximity of a town should cause bees to use more of it than usual. Some strains of bees, however, seem to gather and use more than others.

Worker B.—*Echmops Sphærocephalus.*—American writers speak highly of this plant. No doubt now that attention has been called to it many will plant and report upon it next season. The depth and size of frames has always been a matter of opinion, but the dimensions adopted as a standard were considered by the Committee appointed to examine and report upon the subject to be a fair mean. Bees winter well in Stewarton hives six inches deep, and there is no reason why they should not do so in hives of 4½ inches. More depends upon the bee-keeper than upon the hive he uses. We do not know that bees have yet been wintered in England in hives of this depth. The American and Canadian system of wintering is different, and so is the climate.

E. Thomas.—*Removing Hives.*—In last week's 'Useful Hints,' page 533, you will find directions for removing bees either long or short distances.

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Strond Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Wren & Son, 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Country Honey Supply, 23 Cornhill, E.C.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.

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Editorial, Notices, &c.

GERMAN BEE PAPERS.

We were very much amused in looking over one of the papers read by J. Aspinwall, at the Indianopolis Convention of the North American Bee-keepers' Society on 12th October last, to find the following remarks :—'America stands ahead of all the world in bee-keeping. Look at her array of bee papers. It is greater than all of the rest of the world combined,—two weeklies, one semi-monthly, and three monthlies, to say nothing of the numerous other periodicals that combine bee-keeping with something else. To say that we have a greater number of apicultural papers, and to say we are in advance of all the world in our art, means the same thing.'

Of course if this had been stated by any one else we should not have considered it worth notice, but as it emanates from one of the editors of the *Bee-keepers' Magazine* we must say that we are astonished. We are glad to find that the editor of the *American Bee Journal* has noticed this assertion and that he does not endorse it, knowing better. An editor ought to be acquainted with the bee literature of the day, and the sooner this gentleman studies it the better will it be for his readers.

We take this opportunity of giving our readers a list of the twenty-three bee papers published in German as against the six published in America, that they may for themselves form an estimate and value of the above remarks.

1. Bienenzeitung. Editor, Fr. Wilh. Vogel. Price M 6.50.
2. Deutsche illustrierte Bienenzeitung. Editor, C. J. H. Gravenhorst. Price M 4.
3. Schweizerische Bienenzeitung. Editor, Pastor Jecker, Olten. Price M 4.
4. Der elsassisch-lothringische Bienenzeitung. Editors, J. Dennler, Enzheim, & C. Zwilling, Mundolsheim. Price M 3.20.
5. Centralblatt. Editor, G. Lehzen. Price M 3.
6. Die Biene. Editor, Lehrer Oswald, Darmstadt. Price M 3.
7. Deutscher Bienenfreund. Editor, L. Krancher. Price M 3.
8. Preussische Bienenzeitung. Editor, J. G. Kanitz. Price M 2.50.
9. Bienenblatt. Editor, J. B. Kellen. Price M 2.40.
10. Der schlesische Imker. Editor, J. F. Benda. Price M 2.40.
11. Illustriertes allgemeines deutsches Bienenorgan. Editor, M. Felgentreu. Price M 2.
12. Oesterreichisch-ungarische Bienenzeitung. Editor, P. Cölestin Schachinger. Price M 2.
13. Schlesische Bienenzeitung. Editor, G. Seeliger. Price M 2.
14. Die Biene und ihre Zucht. Editor, Rud. Kern, Price M 2.
15. Biene. Editor, Pastor Hergenröther, Hesselbach. Price M 1.60.
16. Die Bienenpflege. Editor, Dr. Wilh. Ebel. Price M 1.25.
17. Münchener Bienenzeitung. Editor, Dr. Stautner, Munich. Price M 1.20.
18. Pfälzer Bienenzucht. Editor, Lehrer Sauter, Rodenbach. Price M 1.
19. Blätter fur Bienenzucht. Editor, S. Baumann. Price M 1.
20. Illustrierte Bienzeitung. Editor, G. Adolphson, Zurich.
21. Leipziger Bienenzeitung.
22. Blätter fur Bienenzucht, Ungarn. Editor, J. Kriesch.
23. Bienenfreund von Niederbayern.

The above list comprises papers devoted solely to bee-keeping, and does not include any of the periodicals that combine bee-keeping with something else, of which there are a large number.

JUDGING AT SHOWS.

Under this heading will be found in another part of our columns a letter from Mr. William N. Griffin, formerly Secretary to the Devon and Exeter B.K.A., which, coming from one who has had so much experience in judging and conducting shows, cannot fail to be appreciated. Of late there has been so much controversy, and not a little friction, on this subject that it will not be out of place to point out a few of the duties which devolve upon Judges; and also to show that there are certain rules which have been set down which it is the duty of Judges to interpret. To our mind we should not expect more of them than clearly and rightly comes under their jurisdiction. Judging at all times is by no means a light or a grateful task, and if there is anything that can be done to assist those undertaking this laborious work we consider it should be at once done.

The duty of Judges is to decide, to the best of their abilities, on the merits of the exhibits before them, and if in their judgment they are not of sufficient merit, to withhold prizes. But we do not consider that it devolves on Judges to entirely

put certain rules into force or expect them to disqualify exhibits under certain existing circumstances. A Show is supposed to be ready before the Judges commence their work; exhibits are staged, numbered, classified, &c., and it is then that we consider that certain disqualifications if necessary should be accomplished. By this we do not mean to press more work on Hon. Secs.,—far be it from us to even hint this, as we know too well the amount this energetic part of the bee-fraternity have to perform; but when possible some of the Committee might be appointed as a Sub-Committee or Staging Committee: this is already done by some Societies, but we should like to see it general.

Disqualification of certain kinds can only be done by the Judges themselves. Not that we advocate this being practised to any great extent, as it is well to encourage exhibitors as much as possible. If it be a rule that hives should not be painted, and one comes to the Show otherwise; and, again, if this be not a stipulation, but that wet paint be not admissible, we take it that these exhibits, by disregarding the rules, should not come under the consideration of the Judges, but should be at once disqualified by the Staging Committee, and the reason placed on the exhibit.

Turning our attention to the Honey Classes. If it be a rule that a certain number and size of sections are to be staged; or a certain bottle is to be used; or corks are to be indispensable; or glazing each individual section is considered best, then here again the Staging Committee can come down with a strong hand on those regardless of the regulations.

We would not propose that severe measures should be adopted, as exhibitors ought not to have obstacles thrown in their way. But, on the other hand, we contend that a rule is a rule, and should never be enforced in one case and withheld in another without a very urgent reason. For this purpose rules should be most carefully drawn up, and worded in such a manner that there is no ambiguity about their significance; but when once a rule is made it should be enforced.

We suggest the foregoing remarks for the good of the Associations generally, and during the winter months the different Committees might consider what improvements would be advantageous; instructing their representatives, so that at one of the quarterly meetings the matter could be discussed, revised rules adopted, and perhaps a code of points suggested for the assistance of Judges.

USEFUL HINTS.

Four days of fog in City and suburbs, and four days of brilliant sunshine in the country, during which the bees were flying as at midsummer, inclined to rob, and actually took possession of our honey-house—the door of which had been incautiously left open—by thousands, cleaning out extractor, and uncapping a few sealed combs which came first to hand (mouth?). Such is our weather report on this 26th day of November. Roads and footpaths clean and dry, and gossamer webs in abundance. Bees in excellent condition, and several colonies still breeding. A change, it is to be feared, will soon 'come o'er our dream.' We always welcome old Father Christmas, but rather object to his 'hoary locks' and icicles, both on our own account and that of the bees, although a little 'seasonable weather' may be good for both. In our apiary entrances have been kept at summer width, damp quilts have been exchanged for dry ones, roofs have been taken off, and their inner sides exposed to the sun, and our bees are now rejoicing in dry warm hives, with more abundant stores than they will be able to consume between the present time and next May. The price of extracted honey offered no temptation to close deprivation of stores, and so, want of time, and a general dislike of the 'sticky clammy work' of extracting, induced us to leave some 10 lbs. more of fine sealed comb in each hive than was actually necessary, and which, if not granulated, must pass through the extractor when spring arrives.

Foul Brood.—Judging from various letters, which have appeared in our columns from time to time, many have failed to induce their bees to take phenolated syrup. This is not our experience, since our bees have always taken it down as freely as pure syrup, or that mixed with salicylic acid solution, and we always use one or the other, simply as a preventive measure. The efficacy of phenol, as a cure for foul brood, has often been questioned; the following extract being an important addition to the evidence in its favour, we give it somewhat *in extenso*. It is taken from a paper, read by Mr. A. J. King, on Foul Brood, before the North American Bee-keepers' Society, assembled in convention at Indianopolis, on the 12th of October last:—

'In October, 1885, I took charge of an apiary in Cuba, numbering nearly 400 colonies in two-storey hives, situated on the side of a hill, and completely protected by wide high sheds from sun and rain. The utmost cleanliness and good order prevailed in all its appointments. The high and dry country, and delicious climate, left nothing in outward appearance to suggest disease, and yet I found nearly one hundred colonies afflicted with foul brood, fifty of which were very bad indeed. The superintendent had for some time been boiling hives and frames, burning combs, and starving the bees, but had almost given up in despair, believing that the disease would continue to increase until the whole apiary would be utterly destroyed. I suggested that now would be a fitting opportunity of testing the phenol cure, but was assured that this cure had been thoroughly tested and found wanting; that its originator was either a humbug, or that his bees had had a different kind of foul brood.

'That phenol had been used with a lavish hand was attested by numerous empty bottles bearing that label, and by others of larger size containing the liquid mixed ready for use, but that Mr. Cheshire was a humbug I could not tolerate for a moment, and the idea of two distinct kinds of real foul brood existed was certainly very doubtful. However, I determined, on entering upon my duties as "new superintendent," to give the formula of Mr. Cheshire a full and fair trial; and if successful to wait a sufficient time for the disease to reappear, if it would, before giving my experience to the bee-keeping public.

'I procured several bottles of pure phenol crystals, dissolved them by placing the bottle in hot water, and put one small measure full of the liquid into a tin pail, then with the same measure I added 499 parts of a mixture composed of ⅓ pure honey, and ⅔ water, and made a plain mark on the inside of the pail as high up from the bottom as the liquid came, and so had a correct measure by which I could make the food rapidly.

'When heated to 150° Fahr. the bees would eat it with avidity. I placed well-filled combs of this food in open hives in all the infected places, and besides visited the bad cases regularly every three days, taking out the combs one by one, and thoroughly sprinkling them with the liquid.

'In two or three weeks I could perceive a marked improvement, and in three months the disease had almost entirely disappeared, except in three or four mild cases, purposely left to see if they would get well without treat-

ment. As they did not they were taken in hand and cured also.

'Nearly a year has now passed, and from frequent and very recent advices direct from the apiary, I learn that it has not reappeared, but that the bees are in fine condition, and give promise of great results when the season for surplus again arrives. In the experiments made with phenol, before the one I have recited, the solution was entirely *too strong*, as it turned the combs red; it was used too sparingly, and, lastly, it was not half sweet enough, nor warm enough, and the bees would hardly eat it at all.

'In conclusion I strongly recommend all interested to follow Mr. Cheshire's formula literally and accurately, and they will not regret it.'

This is very important testimony, and we think it only justice to Mr. Cheshire, and in the interest of British apiculture, that, through our own columns, it should be circulated as widely in this country as it has been by the American and Canadian Journals in North America. *Suum cuique* is a just motto, and we trust and believe that in the columns of this *Journal* honour will always be given to whom honour is due. There is little doubt that in many cases of failure the phenol solution has been given in too strong a form, and thus the bees have refused to take in sufficient quantity to effect a cure.

Winter Food, in well-managed apiaries, will not require a thought at this season, since all colonies will have a sufficient supply to last until March or April. But where, from any cause, bees are not so supplied, and must have food or perish, what food, when, and how to be given, are questions of considerable importance. We prefer to all other food natural sealed comb-honey, a frame of which should be placed beside the cluster, on a fine mild day, but if such a day is not to be had, the hive should be taken into a warm room and the insertion there made; and towards evening, when the bees are quiet, it may again be placed upon its stand. If sealed honey is not forthcoming, candy, barley-sugar, or 'Good's Food,' may supply its place, the latter being a mixture of finely powdered loaf sugar and honey of the consistency of dough, or stiff putty. Whichever is used it is preferable to give it in frames, placed near the cluster, to giving it on the tops of the frames at this season, since by the latter course, in damp weather, there is danger of deliquescence, and consequent dripping upon the bees below, by which we have known colonies to be destroyed. Barley-sugar, candy, or 'Good's Food,' may be secured in an ordinary brood-frame by tacking thin strips of wood on both sides—the sticks of barley-sugar being placed vertically in the frame.

Dryness of Hives.—Lose no opportunity, during bright sunshine and warm days, with drying winds, of removing hive-covers and placing them in the sun for an hour or two. Quilts also may be changed on such occasions, if damp, but there must be no disturbance of the bees—not even the slightest jarring of the hives, and if satisfied that all is right it is best to let well alone. We are by no means advocates of incessant fidgeting amongst the bees during their winter's rest. But after all is said and done, *wind*, *rain*, and *snow-storms* may be expected, and must be guarded against by having all hives secure and waterproof. Never allow snow to remain long upon the hives, risking a thaw, penetration—as only melting snow can penetrate—and subsequent freezing, until the whole becomes a mass of ice.

Section-cases packed with chaff are often recommended to be placed *over* the frames as a winter protection. They are equally useful when placed *beneath* them also—without the packing, of course—as they prevent accumulation of moisture, assist in ventilation, keep the hive-proper, dry, and form a receptacle for dead bees and refuse matter; but should be removed when spring approaches, and breeding commences. We have always found, by experiment, that a nadir about 4 inches deep promotes the healthful wintering of bees.

Inverted Frames.—When the controversy on reversible frames waxed warm, some twelve months ago in our columns, several advanced bee-keepers announced their intention of giving the system a fair trial and of reporting results. Can we not obtain these reports? They would be very interesting to our readers.

It may be, however, that the Heddon plan of reversible hives has given a death-blow to reversing single frames. Our own idea was rather in favour of inverting skeps, under certain conditions, and we should feel indebted to any who will give their experience for the benefit of all. As for ourselves, from want of time and opportunity, we were unable to experiment on 'inversion,' except in the case of sections, and with these we were decidedly successful, the sections being better filled, and more rapidly completed.

Standard Frames.—A description of Mr. Simmins' hive, which takes the 14″ × 14″ frame, and will also accommodate the present standard, we hope soon to see in the *Journal*; as he kindly offers to explain it. The ventilation of the subject appears to us desirable, and can do no harm.

ABBOTT'S NEW 'SOUTHALL FUMIGATOR.'

This new appliance just introduced by Messrs. Abbott Bros. of Southall is constructed on a principle entirely distinct from those now in use. It consists of a strong and well-made bellows fitted with a square zinc box, inside of which is a very novel and clever arrangement, the acid although simply poured into the zinc box finds no means of escape; when the air is driven through the liquid a most powerful agent is brought about. The nozzle of this fumigator is also new.

Most fumigators are awkward looking appliances and not by any means easily packed, but as the zinc body of this is square it folds into small compass and is very compact.

JOTTINGS BY AMATEUR EXPERT.

'Mel' sapit omnia.

It has come to saying 'good-bye.' Friend McKnight has started for home, giving the Emerald Isle a call *en route*. Bee-keeping will be the more interesting to me in the future for my having the happiness of his acquaintance. We have exchanged photos. I have given him a straw skep and a few samples of 'British honey,' getting a liberal endowment of 'Canadian' in return. A last grip of the hand, 'ta-ta,' and he is off home to duty and to friends. Messrs. Jones and Corneil stay with us a little longer.

While jotting of them I want to say a word of our friend Hooker. British bee-keepers are indebted to him more than doubtless many of them are aware. He has been an excellent chaperon, taking our Canadian friends to see something of provincial bee-keeping as well as the Lord Mayor's Show, Woolwich Arsenal, and some of the sights of town, and has, I am sure, contributed in no small degree to their pleasure during their stay with us.

So every good thing in bee-keeping has come out of Scotland after all. Anyhow they thought of all the new things before anybody else, if they were not the first to make them known. I must confess with you, sir, my pleasure at seeing a line from 'A Renfrewshire Bee-keeper' once more, but what a pity it is that we should only get one from him for such a purpose! It looks vastly like a dog in the manger, to see wise old hands keep still and do nothing themselves, wake up and grumble because younger ones, who probably are not so wise, do the work they neglect, in the best way they can.

But, like the veteran, I do not believe that all the good

things in modern bee-keeping originated on the other side of the Herring pond. Surely we have contributed some of the ideas, although we are slower to adopt them into universal practice.

The original 'bumpist' tries to argue away the testimony of three by the silence of Mr. H. Dobbie. When 'Drone' confessed his failure I advised him to try bumping again, because I have found it more expeditious than driving, but in spite of all my efforts I do find many combs that refuse to break off as I wish. I believe much of this depends on the way the combs are attached to the crowns of the skep by the bees. It is a great nuisance to get a good heavily leaden comb breaking off about two inches from the top, as it makes a horrible mess as well as waste.

To get an employer that volunteers to give credit to his servant is rather a novelty in its way. I met Mr. Blow last week, a few days since, when changing trains at a junction. He had just been advised of the safe arrival of a Carniolan queen and stock of about 40,000 bees at the Cape. I congratulated him on his successful packing. 'No credit to me,' was his reply. 'I was in Normandy; a customer ran down to Welwyn and gave a large order; Buller put on all the hands to the job, got the hives, supers, and paraphernalia, made and marked in the flat ready for putting together out there, packed the whole lot, colony of bees included, and saw goods and customer off by rail, and all in five hours.' 'How did the bees stand the voyage?' 'Excellent; the mortality was very slight indeed.' So our, to me unknown, *confrère* at the Cape is more fortunate than Dr. Walker was over his Zulu.

Talking about Dr. Walker, I have been wondering lately what is come to him. Is he hybernating? I did not see him at either of the meetings to meet the Canadians, nor have we had any of his dry humour in these columns lately.

But I want to hark back to the Carniolans. Mr. Root's rather disparaging account of them has caused more than one to ask me for my opinion; so here it is. As honey-gatherers they are equal to the average Italians, for crossing with blacks they are far and away superior, and for temper there is nothing I ever saw in the shape of a bee to match them. Their swarming proclivities are a drawback; a friend of mine had seven swarms all hanging in some tall limes one hot Sunday last July, ready for him when he came out of church.

I visited the same garden rather late one very cool evening in September; it was all aglow with Canadian balsams, and although there were Blacks, Italians, and Carniolans side by side, yet the only bees at work at that late hour—and they were not a few—were the Carniolans; I expressed my surprise, as, although I had known them for six years, yet I only knew Cyprians to work in such a cool atmosphere. When I was invited to look into their hives, we proceeded to take out two frames from No. 1, and they took no sort of heed; No. 2, ditto, No. 3, ditto, No. 4,—not ditto. 'I forgot,' exclaimed my friend the owner; 'these are Italian hybrids.' We had neither smoke nor veils. Well, we closed them up and went on to the next, which was queenless, the queen, an imported one, having soon collapsed. I was going to jot my thoughts of the harm done to queens by sending them long voyages, but must forbear with the caution, 'Never follow bad example by opening hives late on cool evenings, not even if you are an—AMATEUR EXPERT.'

ASSOCIATIONS.

BRITISH BEE-KEEPERS' ASSOCIATION.

Committee meeting held at 105 Jermyn Street, on Wednesday, November 17th. Present, the Hon. and Rev. H. Bligh in the chair. The Rev. Dr. Bartrum, Rev. Geo. Raynor, the Rev. J. Lingen Seager, the Rev. F. T. Scott, Captain Bush, Captain Campbell, J. M. Hooker, H. Jonas, D. Stewart, W. O'B. Glennie (Treasurer), and the Secretary. The minutes of the last committee meeting were read and confirmed.

The translation of *Modern Bee-keeping* into Welsh was considered, and the Secretary was instructed to confer further with those residents in North and South Wales who felt interested in the question.

The Exhibitions Sub-Committee presented their report relating to the Liverpool, Norwich, and South Kensington Exhibitions, together with a draft schedule of prizes for the Bee Department of the Royal Agricultural Show of 1887, to be held at Newcastle-on-Tyne; the latter, having been considered and amended, the Secretary was instructed to forward copy of the same to the Royal Agricultural Society.

Mr. Corneil and Mr. Jones attended the meeting as representing the Canadian visitors, for the purpose of taking farewell of the committee prior to their departure for Canada.

In the absence of the Chairman, the Hon. and Rev. H. Bligh expressed the hope that our Colonial visitors had spent a pleasant and successful time in England, and that their work had been crowned with success. On behalf of the committee and the British bee keepers generally he wished them a safe and prosperous journey in returning to their respective homes in Canada.

The Rev. Geo. Raynor and Mr. W. O'B. Glennie supported the resolution. Mr. Corneil and Mr. Jones returned thanks for the kind wishes of the committee and for the very cordial way in which they had been received and treated by the British bee-keepers throughout the country.

On the motion of Mr. Glennie, it was resolved that the B. B. K. A. should in future forward a copy of the *British Bee Journal* to the Ontario Bee-keepers' Association.

ESSEX BEE-KEEPERS' ASSOCIATION.

AUTUMN COUNTY SHOW AND CONFERENCE.

The second County Show held this year under the auspices of the Essex Association took place in the Corn Exchange, Chelmsford, on Wednesday, the 17th ult., in connexion with the Chrysanthemum show of the Chelmsford and Essex Horticultural Society. Though not a large show, the exhibits of honey were more numerous than on any previous occasion, and the quality of honey staged was good throughout. An excellent prize-list had been issued, in framing which one of the objects sought was to remove, as far as possible, the objection generally felt to the competition of experts with amateurs. This was effected by the introduction of a class for dealers in honey—that is, any who had during the season bought honey to resell.

The Essex Association are making another departure from the beaten track, in offering their certificates for the best single section of honey, shown in a separate class. In the present show this was done in a class open to all members, and in another for cottagers only. It is an endeavour to encourage the smallest growers to perfect their sections; and it is intended, next year, to offer the Association certificate, with the addition of a small money prize, at village shows in various parts of the county.

The single section and run honey shown by Mr. W. Debnam, expert of the Association, would have carried the palm against very strong competition, and well deserved the Essex B.K.A. certificate and B.B.K.A. Bronze Medal they gained respectively. A single prize only was offered for a home-made hive made by a cottager, but, though professional carpenters were excluded, this brought into competition two bar-frame hives of such excellence that the Rev. G. Raynor, of Hazeleigh, who acted as judge, himself added a second at this show.

The Silver and Bronze Medals and Certificate of the B.B.K.A. were for the first time awarded in Essex. The prize-list included a bar-frame hive with super, by Rowe, Braintree, the same as obtained the Bronze Medal at the International Health Exhibition, 1884, presented by Mr. R. W. Davies, Braintree, one of the District Secretaries of the Association; a bar-frame hive by Dines, Maldon, presented by Mr. Ed. Durrant, Chelmsford; a Raynor feeder and Simmins's dry-sugar feeder, presented by the Rev. G. Raynor; money prizes for cottagers, by Mrs. Tower, of Weald Hall; and a grant from the Horticultural Society. Appended is the list of prizes:—

Twenty-five 1-lb. sections, dealers: 1, W. Debnam, Chelmsford; 2, Ed. Durrant, Chelmsford. Twenty-five 1-lb. jars, dealers: W. Debnam. Twelve 1-lb. sections, amateurs: 1, Mrs. J. Runcieman, Widford; 2, Frank Smith, West Hanningfield; 3, Rev. F. M. Sparks, Billericay. Twelve 1-lb. jars, amateurs: 1, Mrs. Cobb, Chatham Hall, Great Waltham; 2, Mr. G. H. Aubrey, Springfield; 3, Frank Smith; 4, Mr. Leonard Brown, Brentwood. E.B.K.A. certificate for single section, open: W. Debnam. Super, open; 1, W. Debnam; 2, Mrs. Jackson, Tillingham; 3, Rev. F. M. Sparks. Beeswax, open: 1, A. Mayell, Bradwell; 2, Mrs. Jackson; com., Mr. G. H. Aubrey. E.B.K.A. certificate for single section, cottagers: 1, A. Meyall. Twelve 1-lb. sections, cottagers: 1, Mrs. J. Runcieman, Widford; 2, J. Jillings, Broomfield. Twelve 1-lb. jars, cottagers: J. Winter, Kelvedon Hatch. Amateur-made hive: 1, W. Bartropp, Woodham Mortimer; 2, J. Jillings. B.B.K.A. Silver Medal for best comb honey shown by a member of the E.B.K.A.: Mrs. J. Runcieman, twelve 1-lb. sections in amateurs' class. B.B.K.A. Bronze Medal for comb or run honey, ditto: W. Debnam, twenty-five 1-lb. jars in dealers' class. B.B.K.A. Certificate, ditto: W. Debnam, twenty-five 1-lb. sections in dealers' class. Best-kept cottager's apiary within twelve-mile radius of Weald Hall, judged on the report of the Expert: 1, J. Winter, Kelvedon Hatch; 2, F. H. Brene, Brentwood. These were prizes offered by Mrs. Tower, of Weald Hall, at the County Show held at Brentwood, June 17, but only now awarded. There were three competitors.

First Conference of Essex Bee-keepers.—Paper by Mr. Raynor.

The Essex County Bee-keepers' Association held their first Conferences at the Corn Exchange in the afternoon and evening of the same day, and they were fortunate in securing for their president on the occasion so well known a bee-keeper as Mr. T. B. Blow, F.L.S., of Welwyn, Herts.—Mr. Blow said as he took part in the formation of the Association five years ago, he was pleased to preside at their first Conference.

Mr. Meggy, Hon. Sec., in the absence of the Rev. Geo. Raynor (who had to leave to attend a meeting of the British Association), read a paper prepared by the rev. gentleman, upon the subject, 'Which is the best hive for practical use?'

Premising that the chief object in view was the benefit of the cottager or agricultural labourer, the writer stated that it had always appeared to him a grave error to recommend to the ignorant bee-keeper, as a first step in the way of improvement, the adoption of the modern frame-hive. In preference he thought an intermediate step—a sort of 'missing link' in the evolution of apiculture, a 'transition hive'—a great desideratum in educating the cottager and farm labourer. For this purpose he suggested a hive of similar construction to that known as the Grecian, which was described by Mr. Wheeler as long ago as 1682, and later by Mills and Bevan, and had been used for many years in various parts of the country. A model was exhibited and presented to the Association. It is like a skep without a top, but having instead broad, flat sticks placed across the opening at the usual distances at which combs are built, to serve the purpose of guide-bars, and needing to be covered with felt or other material, as in a bar-frame hive. The bars being fixed to the sides by means of long French nails driven into the straw are sufficiently secure, but are easily withdrawn when desired. The hive is made wide at the top and narrow at the bottom, so that it is impossible for combs to fall downwards, and easy to remove them when their side attachments are severed. The writer stated that for more than twenty years he had had in use a hive of this pattern, with an upper diameter of 15 in., lower one 13½ in., depth below the bars, 9 in., the number of bars being ten; and this hive gave very good results. It could be used for almost every system embraced by the frame-hive—doubling, storifying in section-cases, or other supers, and nadirs. It could also be manufactured at a price very little in excess of a good straw skep, and a cottager was more inclined to adopt it than a modern frame-hive, and when he had become expert in its management was more disposed and better qualified for an intelligent use of the latter. Passing on to a consideration of the best bar-frame hive, the paper spoke very highly of the new hive of Messrs. J. Dines and Son, Maldon, which took second prize at the recent Royal Show at Norwich, and described two others specially prepared by the same maker, to illustrate this paper and meet the three requirements laid down by Mr. Raynor as essentials, viz., simplicity, cheapness, and soundness of construction. These they thoroughly complied with, and were besides, adaptable to a variety of combinations, among them making a ventilation space below the body hive for wintering by placing a honey-box at the base.

An interesting discussion followed, and the principal features of the several hives were examined and criticised.

Upon the motion of the Rev. F. M. Sparks, seconded by Mr. Edmund Durrant, a vote of thanks was accorded to Mr. Raynor for his paper.

Mr. F. H. Meggy then opened a discussion upon 'County competitions in London; their probable effect upon the honey-market, and the desirability or otherwise of taking part in them annually. Shall the *Bee Journal* be discontinued, and autumn visits given instead? and How best to increase the usefulness of the Association?'

Expressions of opinions were given by various members on these subjects, and it was at length resolved that the Conference should recommend the Association not to take part in a county competition if one was held in London next year. The decision in regard to the *Journals* was adjourned until the evening.

At the latter gathering Mr. Reginald W. Christy read a paper on the best method of preventing or controlling swarming. Mr. Durrant afterwards gave an address on 'What to teach the cottager, and how best to teach him.' The question of the autumn visits by the expert was again considered, and it was resolved to recommend that, if the funds allowed, two visits a-year should be made, and that if necessary the *Bee Journal* should be discontinued.

Mr. Blow made an excellent president, his practical and pertinent remarks on the various subjects discussed being much appreciated. A vote of thanks to him for presiding concluded the proceedings. The Canadians were invited to be present, but were prevented by other engagements from being present.

GLADSTONI VESPA.

Vespa dedit punctum, frustra medicina paratur,
Da totam Anticyram, namque ibi sola salus.

MR. GLADSTONE'S WASP.

A vicious wasp plunged in its sting;
No drugs will make the man well:
To get him sound, the only thing
Is Colney Hatch or Hanwell.

AMONG THE CARNIOLAN BEE-KEEPERS.

By Thomas B. Blow, F.L.S., &c.

After spending two or three very pleasant days in Venice, in viewing all the sights of that noted city, I left by rail for Trieste. Water would have been preferable, but the Venice steamers had to undergo quarantine on arrival at Trieste, and as I had a very lively recollection of quarantine at a post on my Cyprian bee journey, I preferred the slow and long railway journey.

Mr. Zehetmayr had kindly furnished me with a letter of introduction to a correspondent of his firm, Mr. Francis Cillia, who keeps an English store in Trieste, and he kindly gave me all the information in his power; but the most fortunate thing was meeting with an Englishman in his shop—Mr. Micklewright—who had in years gone by known Mr. Peel very well. Mr. Micklewright had lived at Handsworth when Mr. Peel was there, and Mr. Peel had also met him in Trieste only a few years ago; so he was delighted to see me, and as he had nothing to do, offered to accompany me in my journeyings as far as Langenfeld, and I gladly availed myself of the offer of his company.

I was anxious to see the bees around Trieste, so we took a carriage and drove to Bassoviza, where we found many bee-keepers, some having sixty or seventy stocks. The bees here, and all through Carniola, are kept in boxes about three feet long, ten inches wide, and five or six inches deep. The bees here were a rather mixed race, being in many cases slightly striped with yellow, quite different to those I saw later on in the mountains. We drove farther on to Corgnale, and dined at the inn there, the host of which kept about fifty stocks. His father, he said, formerly had 200 or 300. He said the bee-keepers sold their stocks just as they were—bees, honey, &c.—to dealers, who collected them in autumn, and the price realised was fifteen to twenty florins the one hundred kilos. Most of the honey went to Laibach, the principal town of Carniola, and on visiting Laibach we found this to be perfectly true. The district seemed a fair one for bee-keeping, but the late honey was dark in colour, and was gathered principally from buckwheat, which is much cultivated. After a very pleasant drive we returned to Trieste, and started at once for Laibach, the capital of the province of Carniola. As we got to the high ground we found that winter had almost begun—snow and rain fell freely, and the mountains were quite white. The cold, too, was great, though I was told this state of things was quite abnormal, and that usually the bad weather did not set in till quite a month later.

Laibach is a fine old town, with a big castle towering on a hill close by. Not many bees were kept just near, though the district around is a great one for bees. However, we found one apiary of about 150 stocks, all in boxes, and with the fronts of the boxes most artistically (?) painted, mostly with Scriptural subjects. The owner of this—I could not catch his name—was a Slav, and for Carniola quite an advanced bee-keeper. He had a device for catching swarms. Of course time is of no value here, and the bee-keeper would sit and watch till he saw the swarm about to issue; he would then put the device, which consists of a long canvas bag, on to mouth of the hive, would watch till he saw the queen leave, and swarm would be safely caught in the bag. The bees here were well-marked Carniolans, quite different from those of Trieste. This bee-keeper had not heard of foul brood, and had never seen anything of the sort in Carniola. We invited him to come down to our hotel later, to smoke a pipe with us.

We were told at Corgale of the dealers in honey of Laibach, and sought out the principal one, Mr. George Dolenec. At first he seemed a bit suspicious of the nature of the visit, and I feared not much information would be gained from him, but after a little time he invited us over his store and factory. There was honey in every shape, in all perhaps one hundred tons, hundreds of boxes lying about, the bees of which had been killed, the combs taken out and sliced up and laid on racks on inclined trays in very hot rooms. The honey thus became quite liquid, and left the combs empty on the racks and ran down into tubs at bottom of the inclined trays. The honey was not what we in England should call first-class, and as far as I could glean, it was used largely for confectionery and gingerbread-making. Mr. Dolenec said that a great quantity was sent by him in barrels to Poland and Russia. He had a steam boiler to extract the wax, but he was very chary in explaining how this was done, more especially with regard to the bleaching, which process was, I judge, a secret of his own, for I never saw such beautifully bleached wax before. Of all sorts of wax he had there, perhaps, two or three tons. He asked 180 florins for one hundred kilos of the yellow, 240 florins for one hundred kilos of the bleached. He seemed to make up a large quantity of small images for church purposes from the bleached wax. We were very fortunate in thus seeing what was by far the largest of this sort of establishment in Laibach, and though the difficulty of getting information was increased by the fact that Mr. Dolenec spoke Slav only, yet a great amount of information was gained.

It was a high festival day, and thousands of country people came pouring into the town to attend church. Not many men attended, and it was a curious sight to see the churches crowded with women all with silk handkerchiefs on their heads, some of them being most elaborate and handsome, and I was told that these handkerchiefs are a great feature, and they spend large sums for them.

Returning to our inn, we found two or three bee-keepers waiting for us. With these we smoked and chatted and drunk coffee or wine according to taste, and so ended up a very pleasant day.

The trains here did not seem to run much for the public convenience, for we had to turn out at 4 a.m., and pay for a breakfast which was faithfully promised, which we did not get, and we made the next stop at Radmansdorf at between 8 and 9 a.m. There were two or three dealers in queens round here, but the principal one was Mr. Doukoupil, who had a large apiary, and had some idea of bee-keeping. He had Cyprian, Syrian, and Ligurian bees; and though I remonstrated with him on keeping those races with the Carniolans, yet I could not get him to see it in the same light as I did. I must say that he was the most business-like man I met. He sends queens to America, and uses a form of the Benton travelling block in which to mail them.

From Radmansdorf we went on to Assling where many apiaries were visited, but there were no raisers who knew anything about their business. Here I heard of foul brood, but could not get a sight of any, and felt doubtful whether it was the genuine article. We entertained the bee-keepers of this place, about six in number, to a late dinner, and were joined by a cavalry officer, a clerk from the ironworks near, who spoke a bit of English, the village postmaster, too, and one or two others, and spent a very pleasant evening, the cost of entertaining all these people amounting to under 1*l.*, the inn-keepers here being most moderate in their charges, and though the accommodation is a bit primitive, yet everything is very clean and comfortable.

The greatest man was left till last to visit—Michael Ambrozic, of Moistrana,—and here was certainly the largest apiary I had seen, and a splendid bee-house holding about 500 stocks, all the boxes with beautifully painted fronts. Mr. Ambrozic is a miller, and keeps one or two men to look after his bees. They were busily engaged in breaking up condemned stocks and packing the queens in boxes for sending away. This, I may say,

is the custom all through Carniola, and is the reason why the supply of queens is so uncertain during the spring and summer months. This was almost the highest point at which bees are kept in Carniola, Mount Triglon (9000 feet high) being just near. Mr. Ambrozic had a lot of different appliances to show me, though I noticed he used the old boxes in his own apiary, and not the more modern hives. He said he exported queens very largely, and showed me his particular plan for sending queens to South America, and other far-distant places, and I certainly felt great doubts about it, though he assured me of its success. It consisted of a bar full of little cages, made of queen-excluder zinc. Each bar would contain twenty or thirty cages. Queens were put in these, and the bar placed in the travelling hive with one or two bars of food, and then two or three pounds of bees, mixed from various hives, were put in. Now, as the bees had common access to the queens, I certainly did doubt, and do still doubt, whether many would reach their destination alive. This plan, of course, differs materially from that adopted by Benton and Jones some years ago, which consisted of putting several queens in separate wire cages, and a lot of bees to take care of them. This was abandoned on account of its non-success, for though the bees could not get to the queens to kill them, yet they allowed them to starve to death I believe.

Here I parted with Mr. Micklewright after having had his pleasant company about a week, and journeying on through lovely scenery over the Brenner to Innsbruck, and thence to Munich, where I rested some days and had some pleasant time with Mr. and Mrs. Benton; thence to Strasburg, where I called on one of the principal dealers in bee appliances, and looked over all his wares, and made a few purchases; thence to Mayence and up the Rhine to Cologne, and home through Antwerp and Harwich, having spent a very pleasant six weeks' holiday among the Italian and Carniolan bee-keepers.

My conclusions are that as a race the Carniolans are ahead of any race of bees that I know of, and that their merits are inherent, for no attempt has been made to improve the race by cultivation, by the selection of the fittest, &c. Being natives of a cold, and windy, and wet country, they are admirably adapted for our climate, and they have not that restless tendency that all other races have, and therefore they travel well. I have received full stocks by rail, and the bees have been so quiet that I have thought them dead; but no, they were only resting quietly on their combs. They can be handled without smoke, will rarely sting, and do not run in heaps at the bottom of the bars, or fall off the combs like the majority of races of bees do. For honey-getting they are excellent. The natural swarms are a nuisance, as they fly far and high, though there is not that tendency to excessive swarming that some writers have spoken of. As far as I saw, no one knew how to raise queens scientifically in Carniola, and the supply is from condemned stocks only, and until some one does raise queens systematically, we shall never be able to get a certain supply. At present the supply is plentiful enough in the late autumn, but in spring and summer it is almost impossible to obtain any quantity. These bees have undoubtedly a great future before them, and will, I am convinced, in a few years, come into very general use.

Reversed Boxhive.—I have found the application of a small piece of tick on the bars of a reversed box-hive effectual to the exclusion of the queen. The bars were fixed on a ledge after the hive was reversed, but the bees did not ascend into the section super for some time, and the produce of honey was about the same as in the other hives, which were 'Abbott's Copyable.' My experience agrees with W. F. Hutchinson's, mentioned in the *B. B. J.* for Nov. 11th.—O. B. T.

Correspondence.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of October 1886 amounted to 1257*l.* [From a return furnished by the Statistical Department, H.M. Customs, to E. H. Bellairs, Wingfield House, Christchurch.]

MR. CORNEIL'S SUPER.

[706.] On page 517 I called attention to a few mistakes that were made in your report of Mr. S. Corneil's description of his 'honey crate.' I again venture to point out one or two mistakes in your description of the illustration of this same crate or section case on page 531, and will endeavour to more fully explain the working.

You say figure 1 represents the queen-excluder used by Mr. Corneil which 'is composed of wood $1\frac{1}{8} \times \frac{3}{16}$, with narrow strips of zinc between each slat. These are secured to a cross-bar at each end, one of which is nailed on each side of the slats, *thus making the rack reversible.*' It is evident from your last paragraph that you do not rightly understand how this queen-excluder is used, as it has nothing whatever to do with *making* the crate reversible. The queen-excluder is put upon the hive immediately above the brood frames at the time of supering, and is not touched in any manipulation, either of reversing or tiering up sections. The cross-bars that are nailed on to the queen-excluder, in addition to the strength which they give to it, have another purpose, the under one forms a stop against the hive when the excluder is slid carefully over the top of the frames into position, and the bar on the top forms a stop to show when the crate is in its proper place, and in order that there may be no possibility of crushing the bees when the crate is pushed home, two small studs project beyond the crate so as to give the bees a chance to escape between the crate and the cross-bar.

On referring to the description given by Mr. Corneil on page 486, and to the illustration, figure 2 on page 531, it will be seen that the bottom of the crate consists of slats exactly the same size, $1\frac{1}{8} \times \frac{3}{16}$, as the slats in the excluder honey board, as it is called in Canada, so that when in position they are over each other. The sections used must be $1\frac{1}{2}$ inches thick, so that in the narrow part where the space is cut out they will be $1\frac{1}{8}$ inches, the same as the slats they are to rest on. The brood-frames being $1\frac{1}{2}$ inches from centre to centre, and the sections $1\frac{1}{2}$ inches also, the bees coming home laden with honey have a continuous passage way from the bottom of hive to the topmost sections.

When it is desired to invert the section-crate what is called an intermediate honey-board is used; this is precisely similar, so far as the woodwork is concerned, to the excluder honey board, except that the zinc strips are omitted. The covering of the section crate is now removed, and this board is gently slid over the top of the sections until stopped by the bar on the underside. To invert the crate raise the end nearest to you, at the same time keeping the upper board in position and passing your hands to the middle of the crate, the thumbs being under and the fingers on the side and top, then grasp the whole firmly, drawing the end resting on the queen-excluder towards you, at the same time

that you raise it on end; now turn it over and quietly slide it into position, giving the bees time to get out of the way as you do so. The crate can easily be raised, as the only place for any amount of propolising is between the brood-frames and the excluder, and this is not interfered with in any way.

When it is wished to put on a second crate of sections, the intermediate honey board with the first crate should be raised and the other put under it on the excluder. The sections are thus as close to the brood-frames as possible, and as they rest on the slats forming the bottom of the crate, they are kept quite clean and free from propolis.

With the 1½-*inch sections* there is no necessity for bee-spaces above the frames or under the section crate. One of the distinguishing features of this crate when 1½-inch sections are used is the continuous passage ways. If wider sections are used a bee-space above the queen-excluder and under the crate is a necessity, and the slats at the bottom of the crate must be made the same width as the narrowest part of the bottom of the sections. This bee-space can easily be made by nailing a ¼-inch strip on to the upper side of the excluder. The intermediate honey board must have slats the same width as those at the bottom of the crate.

You say, 'In our judgment this case may be very much improved by an adaptation of wood screws (or rather galvanised iron, as suggested by "Amateur Expert."') In this I must beg to differ from you; in the first place, before the screws could be used, the boards 'fitted into each end of these section cases so as to slide up to the sections if you desire to keep only one or more rows on,' must be supplemented by two additional *fixed boards* in which the screws are to be worked. It is evident that these screws could not be long enough to fasten the loose boards up to two, or even three, rows of sections, as is the case with the arrangement used by Mr. Corneil, and which you are pleased to call a '*makeshift*,' although I must say I think in practice it would be all that could be desired. The fixing of the end, or rather the side boards, would do away with the convenience whilst manipulating, removing the sections, &c., claimed by Mr. Corneil over other section crates.

The suggestion as to the slats in the separator, as shown by the dotted lines on figure 3, which you say was made by 'Amateur Expert' to Mr. Corneil; this idea is not a new one, neither was it new to that gentleman, as I had some talk with him about the same thing some time ago, having seen it described and illustrated in one of the American bee papers, where, no doubt, 'Amateur Expert' saw it also.—JOHN M. HOOKER.

[Our esteemed correspondent has made an error in attempting to correct us about the queen-excluder referred to above by the expression '*thus making the rack reversible*.' We intended our readers to understand there was no top or bottom side to the queen-excluder rack. This was pointed out by Mr. Corneil himself, if we remember rightly, at the meeting in Jermyn Street. We never wished to convey the idea that the queen-excluder rack had anything to do with making the section CRATE reversible. In giving the description of Mr. Corneil's super we endeavoured to point out at the same time what we thought would be improvements that our readers would do well to adopt, leaving them to accept or reject them as they felt disposed. We did not insist very much on the fact that Mr. Corneil's slats were 1½ inches wide, because we do not anticipate British bee-keepers generally will adopt 1½ inch sections; but we did point out to any who intended adopting this kind of section case that '*the slats that form the bottom of the case, as well as those that form the queen excluder, must both be of the same width as the bottom rail of the section you intend to use*,' leaving it to our readers to use that width section which they may deem the best. In saying 'In our judgment this case may be very much improved,' we may be wrong, but we happen to know that a section case has already been made that combines what we believe to be the best points of the three section cases enumerated by us, and on which doubtless leading bee-keepers will have an opportunity of passing an opinion at the quarterly conversazione or on the show table next summer. With Mr. Corneil's description, our illustrated article, and our esteemed correspondent's criticism and fuller explanation, if our readers do not rightly understand this section case, we shall consider them very dull indeed. As to the remarks made respecting our correspondent 'Amateur Expert,' we have no doubt that when this appears in print he will be able to render a good account of himself. We cannot conclude this reply to our correspondent without tendering him our sincere thanks for his constant attention to our Canadian friends during their visit—an attention which few besides himself could have so fully, freely, and fitly bestowed.—ED.]

JUDGING AT SHOWS.

[707.] Now that there is so much discussion about judging I should like to make a few remarks on the subject. I consider it a matter requiring very careful consideration as so much depends on the decision of the judges. In the case of hives and appliances, an article obtaining an award is at once stamped as superior to its fellows (at least in that show); and if the exhibition be an important one this is more than ever the case. The public wishing to purchase any bee furniture naturally consider that the judges have carefully weighed the merits and demerits of each individual exhibit and most frequently decide on the one bearing the much-envied prize card.

In the case of honey, not only the exhibit is considered the best, but the owner rightly, or otherwise, is often looked upon as a superior bee-master. For my own part, having had considerable experience in judging at many of the most important shows in England and Ireland, I am more than ever convinced that the subject is an important one, and requiring our best attention. Rules for judging, if drawn up by the British Bee-keepers' Association, would be of great advantage with regard to hives and appliances, but with honey, I think, the case would be different, as here not only appearance, but taste, has to be taken into consideration. There are, of course, points which will always carry weight, such as colour, consistency, density, and aroma; but to discriminate between the various flavours is no easy task, and after all it is experience, and experience alone, that will enable a judge to decide which is the best exhibit of honey in the class he has to adjudicate. There is an idea that certain judges have a preference to light honey and others to dark; if this be the case, they cannot always exercise it. I have frequently found, in judging, that though in one show the honours have been given to light samples, perhaps at the next exhibition, although (to look at) there were fine displays of clear, brilliant honey, yet darker specimens carried off the palm. Honey being an article of food, taste must carry weight.

I will give an instance to explain myself. At a certain show in a particular class were four exhibits, picked out as superior to the others. A, in appearance, was a lovely colour, and of a thick consistency; B, not quite so light, but good consistency; C, light, but rather thinner; D, dark, and a good consistency.

The first prize was awarded to D, second to B, third to C; and A, the lovely-looking exhibit, was passed over. The owner of A (not in a spirit of controversy) wondered why his beautiful exhibit (to look at) was rejected, and the judges were asked to explain their reasons (only as a satisfaction to the Committee). D, though dark, had a splendid flavour and aroma; B, though

better in appearance, did not possess such a fine flavour; C was equal in flavour to B, superior in colour, but very much inferior in consistency; A, being perfect in colour, and superior to all the others in consistency, was sadly wanting in flavour, and turning slightly sour. The Committee, who in this case tasted the various samples, did not, until it was pointed out to them, perceive the diversity of flavour; when they were unanimous in acknowledging the superiority of the one gaining first honours. There are certain alterations which might be introduced with advantage, and would greatly assist the judges in coming to their decision. In judging honey, although it is of considerable importance that it should be nicely bottled. Yet it is the honey, and the honey alone, that is competing. We all know that green glass does not improve the look of honey, uniformity of bottles would thus appear preferable and be a great boon to judges. Some might consider this a grievance, but how about our sister pursuit Horticulture? Are there not certain rules in many societies that cut flowers must be exhibited in boxes of a particular shape, size, &c.? Nobody complains of this, and might it not be applied to bottles for honey? A bottle which could be decided on after having different opinions might be arranged on, as the one for exhibiting honey for competition. It is not necessary that this particular shaped bottle should be the one always used for bee-keepers to sell their honey in, a few might be kept in stock solely for exhibition purposes.

This brings me to the point of covers, the much-vexed question. Corks have their advantage, screw tops look nice, but if the bottles have been opened several times the covers become loose and do not fit; and then we get leaking honey and its attendant joys. If a particular shape is decided on, would not glass stoppers be a desideratum? A well-proportioned white glass bottle with wide mouth and well-fitting glass stoppers easily removable, would be a great advantage and of considerable help to the judges. I am aware that the bottles I allude to would be more expensive, but then they need only be used in classes where only twelve, twenty-four, or thirty-six bottles are shown; large exhibits, such as the County competition, need not be under this specification, and should have special rules. The remarks as to judging honey apply principally to extracted. Many of the points, however, are equally applicable to comb honey, with a few additions, such as how sealed over, fewness of popholes, straightness of combs, &c. In comb honey I am glad to say we are arriving at uniformity, sufficient to place exhibits on one equal starting-point.—Wm. N. Griffin. *Nov. 15th.*

JUDGING AT SHOWS.

[708.] As a constant reader of the *British Bee Journal*, I have read the correspondence of Nos. 640, 658, and 672, on the above subject, and am pleased to find that No. 672 in his remarks at No. 640, were not intended as grumbling at the decision of the judges. Yet, at the same time, he says his sole intention was of showing the necessity of a recognised system of judging, for the guidance more particularly of those who adjudicate at small local shows: so far so good. Perhaps your correspondent, No. 672, may give us a formulated system for the benefit of his brother bee-keepers. My object in replying to your correspondents is to show how delicate a matter it is for a judge to decide on the merits of honey exhibits, and even under the restriction of a recognised system, a judge must have power to use his discretion; for instance, at Wolverhampton I was a steward at that Show, and was present when the honey was judged, and so near were the exhibits of your correspondents Nos. 658 and 672, that it was only a matter of colour that took first prize.

With respect to your correspondent's (No. 672) double exhibit, it was a pity that he was allowed to make it: had he not done so, the second prize must evidently have fallen to your correspondent, No. 658, to whom it was due. I failed to see how he followed No. 658's example even in a modified form. He distinctly states he made two entries in one class alone, while No. 658, with a co-exhibitor from the same apiary, entered each separately in all available classes: this was not so, they only entered separately in two classes (and not all available), and in doing so, they were quite in order, as each exhibitor was a member of the association, and have separate apiaries.—E. Clowes, *Holehouse Farm, near Milton, Nov. 17th.*

SCOTTISH BEE-KEEPING.—A Protest. [703.]

[709.] I am sure all of us who remember the practical and instructive letters of the 'Renfrewshire Bee-keeper' in the *B. B. Journal* and in the *Journal of Horticulture*, will be delighted to find that he still takes an interest in apiculture, and that he resumes his pen in the defence of his old favourite the *Stewarton hive*, and to raise a protest against the assertion made by Mr. Raitt, that 'nearly all the systems and appliances in the old country were borrowed from the United States.' I gladly take this opportunity of saying *this is not so*, and join with the 'Renfrewshire' in this protest. I felt very angry and indignant when the assertion was made, but I dare not trust myself to speak on the subject, and I must say I was surprised that our chairman, Mr. Cowan, did not take notice of such an unwarrantable assertion. I can hardly think that Mr. Raynor could have been correctly reported, as no one knows better than he does, that the Stewarton hive is the oldest storifying hive on record, that it has nothing to do with America, and that it has been used in England and Scotland over 200 years. I know that Mr. Raynor considers the Heddon hive a modification of the Carr Stewarton, with an arrangement for reversing; this latter is again a simple change from the octagon form of the Stewarton to the square hive, for the more readily using frames instead of bars, the system being the same in all three cases.

I venture to assert, that the only things they have in America in advance of us are better climate and more bee flowers, but our appliances are better made, and far in advance of any that are brought from the United States with the exception of sections and smokers. I also say that bee-culture is generally better understood here than there, but we are handicapped by having such changeable and uncertain seasons.—John M. Hooker.

SCOTLAND *v.* AMERICA.

[710.] I am obliged to 'A Renfrewshire Bee-keeper' for pointing out an error in your report of the few remarks I made at the conversational meeting of the British and Canadian bee-keepers held on the 20th ultimo. So far from accrediting the invention of the Stewarton hive to the Americans, I distinctly stated that I supposed Mr. Heddon had, in his new hive, endeavoured to improve upon the Stewarton principle, embodied in the Carr-Stewarton, by which I meant that the Heddon hive was simply a Carr-Stewarton rendered invertible with close-ended frames.

For more than forty years I have been acquainted with the storifying system, and am not ignorant of the works of Hartlib, Gedde, Warder, Thorley, Wildman, Keys, and others who practised storifying in those early days; the allegation, therefore, that I attributed the invention of storifying, or the Stewarton hive, to the Americans, is not flattering to say the last.

Mr. Raitt's remarks as regards the inventive genius of the Americans having furnished us with many of our modern bee-appliances I certainly endorse and still believe. Your correspondent must pardon me, therefore, if I designate his remarks on the 'Pilgrim Fathers,'

'Red Indians,' 'Yankee Doodle,' &c., by that expressive Americanism 'hunkum,' which may mislead the ignorant, but will not make much impression on the educated.—GEORGE RAYNOR, *Hazeleigh Rectory, Nov. 26th.*

FLOREAT SCOTIA!

[711.] 'A Renfrewshire Bee-keeper' (703) belabours us poor Southerners for deficiency in British pluck because we did not blow our own trumpet with sufficient vigour when entertaining our Canadian brethren, and apparently thinks that a game of brag would have been more suited to the occasion. But would our Canadian visitors have joined in such a game?

The only tall talk that I heard at the five o'clock meeting at the Colinderies was from Mr. Raitt, who is rated for his deficiency in that commodity; but though he belauded Scotland without stint, he did it with so much pleasantry that no one could find fault with him. It is true Mr. Jones enlarged on the merits of the Heddon hive and his own experiences, but that is exactly what we all wanted him to do, and he did it in a most genial and amusing manner; and when it came to the heckling he caused many a hearty laugh by the quaint and skilful way in which he parried awkward questions.

We in England (I hope it is not treason to use this expression) have no great liking to tall talk, and it never before occurred to me that our American cousins may have inherited the gift from the other side of the Tweed.

The Heddon hive was said to resemble the Carr-Stewarton, with which I am unacquainted, but it struck me that the chief features of the former were the sandwiching of the section-rack between the upper and lower brood-frames and the manipulation of the excluder-zinc—an appliance which, like upward ventilation, is being given up in many parts of the United Kingdom of Great Britain and Ireland, the Channel Islands, and the Isle of Man.

I think I have heard that there is nothing new under the sun, and if bee-keeping is to advance, we must expect not unfrequently to have *reculer pour mieux sauter*.—L.

FOUNDLING BEE-ISTS.

'Where the bee sucks there lurk I.'

[712.] Have not the bowels of numerous readers of the *Journal* yearned with compassion for the forlorn bee-keepers of Yorkshire, as they read from time to time the wails emanating from Horsforth and elsewhere, piteously descriptive of their neglected and forlorn condition? Has not the sigh of pity been succeeded in their breasts by the intense yearning cry, 'Oh, that we could extend towards Yorkshire a flourishing branch of our own county tree—our Skyrack, our Shireoak—on which ye could perch! There could ye resort for counsel and for mutual instruction, "welcome the new, and speed the parting" fad; mellifluously cheer each other on the rough and stony road all amateurs must tread.' Or (horrid thought!) have bursts of indignation taken the place of pity? 'Yorkshiremen, forsooth, known the world o'er as hard-headed men of common sense, and practical to a degree. Bounteous Nature has given them a land *multi secundus*, flowing with milk and honey; yet there they roll on, "in the way their fathers trod," almost without organization. Shame on them!'

If honey be got it cannot be sold—a mess is hawked about from door to door, cheap yet dear at any price—if honey be wanted it cannot be got. Now were Yorkshire organized, supply and demand would be in touch of each other. It is too much to expect that a single Hon. Sec. and his officers can do all they would or should, or anything at all approaching the absolutely necessary requirements of so vast a county, so let us deal tenderly. Spasmodic efforts (not unlike the fitful throes of Nature in her efforts to start a new species) are now and then made to form branches from the Parent (*sic*) Society, but they naturally end in smoke and crackle, the fizzing and spurting representing the sum total of the excitement and subsequent disappointment. Young hopes are blasted, for how can healthy progeny be expected if the parent be lethargic or effete?

Yorkshire seems like a leviathan ship officered by the crew of a fishing smack. The crew (let us give them credit for their efforts and motives) might do good service within a reasonable radius, but their misdirected energy, if it really do exist, simply lands a *Great Eastern* floundering helpless amongst shoals and quicksands, unmanageable by reason of her size.

A piece of perforated zinc may stop the working of a hive; 'a wheel off' may block a thoroughfare; a hollow trunk may do for bees, but not for their masters; the roots are gone, it cannot put forth branches. Shall we pray for its fall? That the crew may place the leviathan upon the stocks? We would chant a dirge, a requiem. 'R.I.P.' and 'Resurgam' should be inscribed on the tablet, in hope of a phœnix-like resurrection; and that a brood of young phœnixes would rise from the ashes and bring *old Yorkshire* triumphant again and true to her traditions, would I am sure gratify all her bee-keeping cousins.

I do not know the worthy Hon. Sec., nor indeed a single member of the Yorkshire Association, so cannot be charged with *animus*, personal or otherwise, but—*pace* Hants and Isle of Wight—what will the B.B.K.A. say when I tell them that the Association is thus described by one of its members:—(1) Somnolent. (2) Literally nothing done this year. (3) The last meeting attended by only the Hon. Sec. and another. Perish Yorkshire bee-keeping and its Association if this does not make the blood of Yorkshiremen tingle with shame!

Yet now comes a ray of light from Beverley (p. 547). 'A light shining in a dark place until the day should dawn.' '*Lux in tenebris*' or '*Ex fumo dare lucem*' should be our motto. I had really begun to think with Samson that Association meant

> 'Total eclipse! no sun, no moon;
> All dark amid the blaze of noon.'

But now I will take heart of grace, if through the little cloud of smoke I may have raised there come a few stray gleams of light to show us that the sun of bee-keeping still shines for Yorkshire, and that her bee-keepers recognise the vacuum, the hiatus, which exists in the county.—R. A. H. GRIMSHAW, *Horsforth, near Leeds.*

YORKSHIRE ASSOCIATION.

[713.] I saw a letter in your valuable *Journal* complaining that we Yorkshire bee-keepers had no County Association. But seeing our Secretary's name in print, I wrote to him for advice, which he very kindly gave me; and more than that, he voluntarily came over to see me and my bees, and invited me over to spend half a day with him, when he gave me practical lessons, with his bare hands taking out every comb and seeking for the queen, teaching me to act towards them gently and quietly; and all this he did with a cheerful smile, telling me every thing he thought I should stand in need of. I would all our bee-keepers should join our Association and have the members' names printed on a leaflet, so that we could buy honey or bees of each other, and so be a mutual help. It is my first year in bee-keeping, and have had some people wanting to buy my honey, but I told them I should never have any to sell, for I thought it cheaper than butter. I should like our Association to form a

club for cottagers with allotment gardens, so that they might send contributions to some secretary, where they could purchase a swarm or a stock hive in spring at so much a-week. I am a constant reader of your valuable *Journal*. Our Secretary's name is Mr. Rickards, Manor House, Poole.—G. Rushworth, 17 *Lady Lane, Bradford.*

CORSICAN BEE-KEEPING.

[714.] In Boswell's 'Journal of a Tour in Corsica,'—a rather scarce book published in 1768,—I came upon a passage which I have not seen previously quoted, and which, I think, may be interesting to bee-keepers; he says, 'At Corte . . . . I was very politely received, and was conducted to the Franciscan convent, where I got the apartments of Paoli,' (the patriot general). 'These fathers have a good vineyard and an excellent garden. They have between thirty and forty bee-hives in long wooden cases, or trunks of trees, with a covering of the bark of the cork-tree. When they want honey they burn a little juniper wood; the smoke of which makes the bees retire. They then take an iron instrument with a sharp-edged crook at one end of it, and bring out the greatest part of the honey-comb, leaving only a little for the bees, who work the case full again. By taking the honey in this way, they never kill a bee. They seemed much at their ease, living in peace and plenty' (this relates to the fathers, not the bees,) 'and I often joked them on the text which is applied to their order, "Nihil habentes et omnia possidentes,"—having nothing, and yet possessing all things.'—G. F. Masterman, M.D. *Yorke House, Stourport.*

GALVANISED IRON CYLINDERS.

[715.] We do not for one moment wish to dispute the truth and importance of your correspondent's statement on page 532, *B.B.J.*, Nov. 18, 1886, but we think a short account of our experience may perhaps be of some service to nervous bee-keepers, and those who think the honey they have stored in galvanised vessels is useless, and that the bees fed from the same will surely die.

For the last four or five years we have used galvanised iron cylinders as receptacles for honey, and we have in use at this moment six cylinders holding an average weight of 4 cwt. of honey; we never find the honey lose colour or flavour in the slightest degree, nor has the syrup stored in these cans ever killed our bees (we never use salt in our syrup, as we have no reason to believe it to be of any value whatever.)

As our apiary has always proved a grand success, and as our honey has made us famous, we can only say that we believe no evil will result from the regular use of these vessels for pure honey or syrup, although any mixture of chemicals may prove fatal.—Abbott Brothers, S.W.A.

SIZE OF FRAMES.

[716.] If it be decided to adopt a second standard frame of a larger size than the present one surely the Langstroth is the proper size to choose. At the present time there are probably more of these frames in use in America than of all other sizes combined. Another excellent frame as used by T. F. Bingham, the American, might meet with favour. It is only six inches in depth, and might be used without a bottom bar; for building up fast in the spring a double hive would be necessary, which might be removed when the supers were placed on.

With the frame recommended by Mr. Simmins I fancy the bees would waste time, climbing to the supers—in this district at any rate bees would store most of their honey at top of such very high frames, and somewhat neglect supers. In case of a second standard frame being decided on, in common with Messrs. Raitt, Simmins, &c., I trust the useless $1\frac{1}{2}$ inch shoulders will be dispensed with, a top bar with $\frac{3}{4}$ inch shoulder, as universally used in America, is far preferable, and would if used considerably cheapen the cost of hives and better their appearance. Five years ago I used wide shoulder frames (Abbott) with only $\frac{3}{4}$ shoulders and propolization was almost nil. In our most popular manual of bee-keeping (Mr. Cowan's) that gentleman recommends frames with Root's metal corners, which only form a $\frac{3}{4}$ shoulder.

If the general body of hive makers had been consulted on the frame question in all probability the standard frame would have been fitted with a $15\frac{1}{2}$ top bar instead of the useless 17 inch one, which puts a simple extracting hive out of the question. With a $15\frac{1}{2}$ inch top bar a hive can be neatly and strongly made out of one inch stuff, at a price suitable for cottager's purses. I trust Messrs. Cowan, Cheshire, &c., will favour the readers of the *Journal* with their opinion on this most important matter.—G. Stothard, *Welwyn, Herts.*

BUMPING.

[717.] Mr. Lyon's letter (702) has induced me to promise myself another trial of bumping at the commencement of operations next season. Mr. Lyon suggests that the breaking of the combs some distance from the top of the skep, as reported by myself and others, was caused by giving the blow in a vertical direction, and not in the direction indicated in the illustration, p. 314. Unfortunately I did strike vertically, hence I presume the unsatisfactory result. I have been endeavouring to evolve a substitute for 'humping,' but so far without success. The word is not 'illigant' enough for such people as we are—bee-keepers, to wit, and I trust that some one will be able to produce something satisfactory to take its place.—Welsh Novice.

FOUL BROOD.

[718.] My experiences of foul brood is very different from those of T. F. Ward in 688, in which he says 'the disease is not got rid of by sacrificing the old combs, putting the bees on new foundation in clean hives.' That in my experience with phenol is the only means of a cure, and that I know is the experience of a great many here who have had it for the past three or four years and tried every known cure. Again he says, 'Mr. Cheshire's remedy will cure a hive if the queen is free from the disease.' I have not found it to do so, although I consider it one of the greatest blessings bee-keepers have got. I used it in all my hives in 1885, and they thrived and grew strong and gathered lots of honey. In the autumn I weeded out all the worst combs, but in the spring I am sorry to say all their first batches of brood went wrong, and I had camphor in them all at times. I again commenced to give phenol and inserted an outside comb in between as soon as the weather would permit, and the brood of it came away as white as snow. Now if the queens were wrong how was this? Again, my swarms coming of these hives were placed at once in hives that had been boiled and washed with carbolic on clean foundation, and as yet they have shown no signs of the disease, and some of these queens have been bred and been in foul hives for three years. Now if queens are at fault mine should have been; but I am thoroughly convinced that clean hives, clean foundation, and phenol, is the only cure worthy of a name.—James Saddler.

QUEEN INTRODUCTION.

[719.] In his letter, page 523 (669), I see that 'North Derbyshire' says he introduced two queens successfully according to the 'law' given on page 307. It appears

from this 'law' that the queen may be introduced *day or night* (see what A. B. B. K. says, page 318, line 44 (441).

Now, 'North Derbyshire's' statement is rather misleading, as although he complied with the 'law' in these cases, yet it was also the method advocated by Mr. Simmins. I much doubt whether he would have been successful in both cases, if in either, had he *introduced them in the day time*, whilst he would be almost certain to successfully introduce them at night as he did, especially if he kept the queens without food for thirty minutes as recommended by Mr. Simmins, and perhaps more certain still if he had introduced the new queen a shorter time after the old one had been displaced—two hours are sufficient in my opinion; the great point is not to look for the new queen too soon, or she will be balled. I consider that forty-eight hours is not enough, in some cases I think a week is not too much.

The above will perhaps explain to 'A Benighted Essex Bee-keeper' that the 'law' and the method known as the Simmins' plan are two very distinct things, yet agreeing in some respects. Mr. Sadler advocates his method described on page 332 (464). I have no doubt that it is successful, but there are three things against it. Firstly, danger that the queen may run down before you can pour the scented syrup on her majesty; secondly, danger of suffocating the queen with the syrup; and thirdly, it would as a rule be more trouble than the Simmins' plan.

Queen-cells no obstacle to Queen introduction.—I believe all our leading bee-keepers used to say that bees having queen-cells would not accept a new queen. Even were this point not disputed I have during this last autumn had conclusive evidence, to my mind, that queen-cells have little or nothing to do with it one way or the other. If desirable I will at some future time give the particulars.—A. T. Wilmot.

DOUBLING.

[720.] A 'doubling-box' is now a *sine quâ non* to a useful hive.

With your permission, I would ask the opinion of your readers as to the feasibility of packing sections in this upper storey between the ordinary 'rabbets,' without the use of the usual crate.

The advantages appear to me to be:—(1). Economy in appliances. (2). The easier and more gradual reduction of the number of sections towards the end of the season by the use of two dummies. (3). The greater retention of heat for the frames of the brood-chamber which were uncovered by sections could be more snugly 'quilted' than is possible, when the ordinary section-crate is only partly filled with sections.

One objection is that the sections would not exactly fit the space between the 'rabbets' ($14\frac{1}{2}$). But it would be easy to fit wedges of wood to fill the surplus spaces at the sides, and to keep the sections tight.

In the doubling-box of a twelve-frame hive we could thus pack fifty-four ($4 \times 4\frac{1}{2} \times 2$) sections in two tiers: or we could reduce the number gradually down to three, which could be placed directly over the central frame of the brood-nest.—G. J. G., *Dartford.*

CAMPHOR AS A CURE FOR FOUL BROOD.

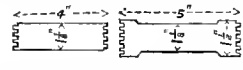
[721.] The 'Man of Kent,' in (674), wants experiences of the use of camphor as a cure of foul brood. I might as well have put a stone in the hive. Salicylic acid with me did more harm than good. I know, Mr. Editor, that this is against your ideas, but, nevertheless, it is my experience; and now I hope you will allow me to give my experience with the use of phenol. I do not mean to enter into details, as that would unduly extend my letter. To use phenol as strong as recommended by Mr. Cheshire I have found it to do about as much harm as good, and to get the bees to clean the foul combs I acknowledge that I am beat. But to use it about half as strong as recommended I have found it quickly to restore the bees to health, and the brood that was not previously touched as quickly becomes pearly white, but still the diseased brood remains. This year I have transferred all my bees to clean hives on foundation, and fed with syrup containing one bottle of phenol solution to three pints, unless the swarms which have gathered as much as will keep them, and at end of season I could not see a bad cell; and I am thoroughly convinced after four years' experience, experimenting thoroughly, that phenol is the safest thing to use either as a cure or preventative.—Jas. Saddler, *Hon. Sec. Forfar B. K. A.*

SECTIONS AND SEPARATORS.

[722.] It is a pity, I think, when you attempt to illustrate the manner in which anything is made, with the object of instructing your readers how to make and put the same together, that the drawing is not to scale, and finished in such a careful way that in carrying it out no disappointment may be experienced from finding the work cannot be put together. This would be the case with the sections which you illustrate and describe in your issue of November the 25th. If you refer to the ends of the sections showing the dovetailed corners, or, more properly speaking, the saw-cuts, you will find, if made as shown, they could could not be put together, there being the same number of saw-cuts in each piece, so that when the pieces are brought together the saw-cuts will be opposite each

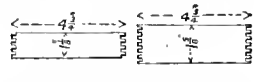
other, and consequently cannot be fixed. The width of the openings made by the saw-cuts and the spaces between the openings should be the same size, the projections in one piece coming opposite to the saw-cuts in the other, so that they can be readily put together in a secure manner. I send you a wood engraving drawn to scale, which will show you how the illustration should

have been to be of use to your readers, and would suggest that a practical mechanical draughtsman and engraver should be employed for work of this kind, which looks very simple, as it is, but to be instructive should be drawn to scale correctly, showing the smallest detail. This wood engraving is done by Messrs. Hare and Co., of Essex Street, Strand, who have draughtsmen



accustomed to practical, as well as the most complicated, mechanical work requiring great exactness of detail.

The $4\frac{3}{4} \times 4\frac{3}{4}$ section, scaling nineteen ounces (?), and



which you say 'have evidently been raised by separators that were too narrow,' was not Mr. McKnight's, as his sections were all $4\frac{1}{4} \times 4\frac{1}{4}$, and not filled between separators. You remark, 'Four-piece sections are not new, we saw them in 1881.' They were in use some years before that, for I exhibited a case of sections of this kind at the Alexandra Palace in 1876, for which I was awarded a medal.

I wish you had been present when our friends opened

several crates of sections that had been worked without separators, and seen the difficulty there was in getting first one out, and the bruised and bleeding condition of the honeycomb.

You are mistaken when you say, 'The Canadians had not a single one-piece section,' for the whole of those of Mrs. Couse, Mr. Dunn, Dr. Thom, and Mrs. Saunders, together numbering 1944 sections, were all one-piece basswood sections. The four-piece sections were mostly made of spruce, but that wood is too brittle to make one-piece sections that projected beyond the line of wood when it was got out. It was evident that great care had to be taken in filling the crates, and that the sections were placed in the same position as they were filled in the hive, the projection of the one going into the hollow side of the next. It was quite amusing to hear both Mr. McKnight and Mr. Corneil cry out, that they would not do without separators whatever others might: and in this I heartily joined. It should not be forgotten that all these sections were selected by the exhibitors from large quantities, and yet in the best there was this imperfection; the sections could not be covered with glass on account of projecting beyond the wood, and if put into a box the sealing of the comb is rubbed off. The honeycomb was beautiful, and the corners were generally filled; but the *wide* pieces of wood in front of the glass at the top and bottom of the crate concealed very many '*pop-holes*,' and showed the sections off to the best advantage. The Canadians understand how to show their goods to the best advantage.

Mr. Pettit, of Belton, was not a commissioner, but one of four delegates appointed by the Ontario Bee-keepers' Association to take charge of the honey exhibit.—JOHN M. HOOKER.

[We have such confidence in the general intelligence of our readers that we are fully persuaded that, with the description and illustrations given in our last issue the relative sizes of Canadian sections and Mr. Corneil's method of fixing foundation in sections were fully understood; yet, from our deep respect for the chivalrous feeling exhibited by our esteemed correspondent towards our Canadian visitors, we willingly give insertion to the foregoing supplementary information, and desire to thank him for the trouble he has taken.—ED.]

GLEANINGS.

In the *Bulletin de la Société d'Apiculture de la Somme* we read the following arbitrary regulation respecting hives announced by the Mayor of Boussy-Saint-Antoine and approved by the Prefect of Seine et Oise, which, if enforced, will practically put an end to bee-keeping in that district, and is in opposition to all the laws of the country as interpreted by the *Code civil*:—'We, the Mayor of the commune of Boussy-Saint-Antoine, in accordance with the law passed 5th April, 1884 (Art. 91 to 97), which authorises mayors to make regulations for the public safety; in consequence of the large number of hives placed near houses, which are a danger to personal safety, it is necessary to put a limit to the abuses which have developed lately. We order and decree as follows:—Art. 1. No proprietor of an enclosed garden will be permitted to establish an apiary nearer than *one hundred and twenty metres* (about 394 feet) to any inhabited building. In the rural district the distance will be reduced to *forty metres* (about 131 feet) from any neighbouring property and from the roads crossing the commune.—Signed: David, Mayor.' It is hardly creditable that in the nineteenth century so much ignorance can exist of the habits of bees, even in a mayor; but surely those who have the power to make regulations should be better instructed. We are glad to find the Société d'Apiculture et d'Insectologie have petitioned the Minister of Agriculture to do away with this order, pointing out that, according to Art. 524 of the *Code civil*, bees are classed among harmless domestic animals.

In the *American Bee Journal*, R. Woodward says, 'I have lately discovered a curious connexion between the head of the worker bee and the honey-cell, which may, perhaps, throw some light upon comb-building. Suppose a worker bee's head is severed from its body and laid flat on a sheet of paper, the angle which would be represented if lines were drawn on the paper along and beyond the side of its head, would, by careful measurement, be found to contain 60°. Now, as the angle formed in the honey-cells contains 120°, it will be seen that this angle is just double the size of the one formed by the bee's head, or if we place *two bees' heads* side by side, we shall then obtain the exact angle of the honey-cell or hexagon, namely, an angle equal to 120°. This is surely a singular coincidence, as the worker bee, apart from instinct and reason, seems to contain *in the shape of its head* an angle-setting-out instrument suitable to the construction of the cells that it has to build.'

In the *Journal of the Royal Microscopical Society* we find Herr K. Müllenhoff's further studies on the 'Structure of the Honey Bee's Cell.' Herr Müllenhoff reports the results of his studies as to the influences resulting in the formation of the cell. Extending the old observations as to the optimum exhibited by the form of the cell, he shows how its length is also in perfect accord with the best solution of the bee's problem. As to mechanical explanation, he extends Buffon's experiment with the boiled bottled peas swollen into hexagonal form by mutual pressure, by showing that the general resultant figures are really rhombododecahedra, while those at the sides exhibit the exact form of the bee-cell. After referring to Darwin's for the most part teleological attempt at solution, he directs attention to the necessity of considering the nature of the component substance, the behaviour of the bees, and the exact nature of the mechanical force at work. He emphasizes the perfect plastic character of the wax at the temperature of comb-building (27°–37° C.), and distinguishes three different phases in the process. (1.) The formation of Maraldi's pyramids and short prisms. (2.) The increase of the prisms to their full length. (3.) The filling and closure of the cells. Describing the beginning of the process, he shows how the simple contractility of the material effects the disposition of the wax into small pellicles of equal strength, the perfect squaring of the walls, and the formation of surface angles of 120°. In describing the successive stages, he lays special stress on the variations which must follow the changes of temperature and the continued plasticity of the cell, which is continually tending to acquire smaller surface and stronger walls. The cells behave mutually, like soap-bubbles. Maraldi's pyramids are literally Plateau's equilibrium figures, with the smallest surface within given limits, and the whole cells are isoperimetric figures, with smallest surface for given contact. In short, not to any artistic dexterity on the part of the bee, nor to any direct effect of its body-form, but to 'statical pressure according the laws of equilibrium' is the beautiful result to be referred.

Echoes from the Hives.

'*Honey Cott*,' *Weston, Leamington, November 29th.*—We have had a lot of dark, damp weather, characteristic of the time of year, with only here and there a bee flying. There has been a heavy rainstorm this morning, which having cleared off, the sun has been shining brightly, and has caused the bees to fly in great numbers; so that it is likely we shall get some rough, stormy weather. Have got my bees in fair condition for wintering. The tom-tits are getting rather fast again, eating the bees. They fly down to the hives and up into the apple-trees, and I find quite a quantity of the husks of the bees on a hive that is under an apple-tree, so much so that I shall have to resort to shooting them.—JOHN WALTON.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

A. Jack.—*Preventing Swarming.*—Your proposal of placing shallow frames of four or five inches in depth below the brood chamber at the time of putting on the section cases above, is a plan we have practised successfully for many years to prevent undesired swarming, and it is the best we know when the object is comb honey. Do not place more than one section case on at first, and when it is partly filled, raise it and place another beneath it if the population is numerous and honey coming in fast. Rather than carry about a thirty-foot ladder, and risk one's neck by climbing lofty trees to hive swarms, we should certainly clip the wings of the queens, much as we dislike the practice. We trust you may succeed in time in converting the skeppists and inducing your fellow countrymen to subscribe to the *Journal* and to contribute to its columns. We thank you for the efforts made on our behalf.

A. J. W.—1. *Queen Introduction.*—The principal reason for *night* introduction of queens direct being made at the top of the hive in preference to the flight-holes, is, we apprehend, that there is less risk of the queen becoming chilled in case of the bees paying her no attention, the top of the hive being much warmer than the bottom. The entrance also is more strictly guarded than the top. The object of injecting smoke previous to inserting the queen is to drive away the bees for the moment, in order that the former may have a quiet entry, and may begin to feel at home before the latter surround and examine her; and, having fasted for half an hour, the queen is more inclined to cultivate the acquaintance of her new subjects by receiving food from them. 2. *Preserving Floor-boards.* — There is no objection to coating the under side of the floor-board with gas-tar, which is a better and more lasting protection than paint. About one-tenth part of Stockholm tar should be mixed with nine-tenths of gas tar, and a little spirit of turpentine added as a 'dryer.' This compound, when dry, is bright and smooth, having the appearance of black varnish. The outer cases and the roofs of all our hives are thus treated, and the varnish has no ill effect upon the bees, but it is best to apply it at a time when the bees are not working, otherwise many would perish by settling upon the undried tar.

M. O.—1. *Honey in Beer.*—We have no experience of the practice of using honey in brewing, but imagine that the beer would be no better than that with which coarse sugar is mixed. Having more honey than you can dispose of, why not make mead from some of the old recipes? If used in beer we should add four or five pounds to the bushel of malt, and age would, no doubt, much improve the beer or ale, which should be strong, and plenty of hops used. 2. *Melting Honey.*—Melting honey undoubtedly depreciates its quality, and it does not granulate afterwards, as a rule, though it will sometimes.

Mrs. C. M.—*Honey not keeping.*—The bladder covering the jars becoming puffed up shows that the honey was unripe, and consequently now fermenting, the disengagement of gas causing the bladder to become convex. You had better remove the covers, skim off the top, and let the bottles remain in a warm place, loosely covered, for a few weeks, or in a very warm place, such as an oven with the door open, for some hours. Be careful not to over-heat the honey.

Cumbrian.—1. *Treatment of Bees Suffering from Dysentery.*—The cause is damp, arrising either from a leaky hive or from late feeding with syrup and the presence of unsealed food. Remove the bees to a dry hive, take from them all combs containing unsealed food, or extract the unsealed and return the combs; crowd the bees on as few combs as they can cover, place a cake of candy on the top of the frames, and over that a tray with canvas bottom, filled with cork-dust. 2. *Sugars.*—No. 1 sample will serve for syrup-making. For dry sugar feeding, Porto Rico or Demerara.

Alb.—*Italian Queen introduced in October.*—You need not be surprised at not seeing any yellow bees flying, as the season was too late for breeding when you introduced the queen. As you know her to be safely accepted you will find her progeny gradually displacing the blacks in the spring.

G. L. Morton.—*Treatment of Queens.*—There is no necessity to cage the queen in the stock hive, because when it is moved the large number of young bees protect her from harm. Besides, when the hive is moved during the time that the bees are collecting, when they return they will be bringing food with them, and although strangers they are usually accepted at once by the inmates. There are also plenty of bees remaining in the hive to protect the queen. Second, the reason is that they are filled with sweets. Third, to insure pure fertilization you should be certain that there are no black drones out in your neighbourhood before yours. We have no difficulty, but then we raise our queens early in the season. We thank you for your compliment and good wishes.

H. A.—*Observatory Hives.*—Directions for making these hives will be found in Vol. XI., pp. 210, 261; Vol. XII., p. 32; Vol. XXII., p. 119.

G. F. Dickinson.—*Transferring.*—Instructions in transferring from skeps to bar-frame hives will be found in *Modern Bee-keeping* (J. Huckle, Kings Langley, Herts, price 6*d.*).

C. A.—*Queen's Sting.*—The queen's sting is rather longer than the worker's, and curved towards the ground as she stands, like a scimitar; it is also more obtuse than the worker's, and is only a little roughened near the apex, scarcely sufficient to be called barbed. It is very unusual for a queen to sting, but if she does, she does not, like the worker, expiate the act by her death. Illustrations of the sting of the queen were given in Vol. I., p. 157.

Suggestion for Standard No. 2.—May I suggest instead of a frame $16 \times 9\frac{1}{2}$ one 14×12 for standard No. 2? It would then be quite possible by means of lifts placed below the hive body to use our present hives for either size.—Trevor Saynor.

Extraordinary Bees.—On Sunday morning, October 31st, Mrs. Hanbrook, of Ashmore Green, found a swarm of bees hanging on a bough near to her other hives in her garden. They appeared to be in a numbed condition on account of the cold night, but on being carefully housed and fed with sugar, they soon became quite lively, and are doing well. The way in which this lady accounts for the phenomenon is that some modern bee-manipulators had 'driven' the bees by taking their honey, and they had left their empty house to seek to share the better-provisioned larder of hers. 'Bee driving' is looked upon in in this locality as not only cruel to the bees, but almost dishonest, for it frequently happens that the old stocks are infested by 'robber' bees, which have been forced by the new process to 'take to the road' as a means of subsistence.—*Newbury Express.*

Queen Introduction.—I have been much interested in the controversy about queen idtroduction, and with your permission I will give my experience. On August 28th I discovered one of my hives queenless, and without the means of rearing one, having neither brood nor eggs in the hive, although there were seven or eight queen-cells, but empty. I sent to Mr. Simmins and got a black queen on September 4th. I took her after dark, and turned back the quilt at one corner, and allowed her to run down. I kept her near an hour under a glass by herself. On examining a week after, I found a quantity of eggs laid in compact patches, and all has gone on well with the hive since. I had never seen a queen introduced previously, and this was my first attempt, otherwise I would have got a Ligurian.—J. Fenwick.

Hawthorn Honey.—Having seen a query in your *Journal*

of November 4th about 'Pure Hawthorn Honey,' I beg to say that in 1885 the hawthorn here was very late in blossom, and the bees gathered quantities of honey from it. I had a lot of sections beautifully filled, and it was just as 'Amateur Expert' describes it, 'the colour of olive-oil, and dense in consistency,' and the flavour was delicious, and quite the taste of the smell of hawthorn; it was altogether quite distinct from other honey, and was unmistakeable. This year I hoped to have it again, and was ready for it, but rain and storm prevailed, and washed away the bloom in a few days.—E. E. Rutherfoord, *Carlingford, Co. Louth.*

Mead.—*To Make Strong Mead.*—Take a quart of honey to three quarts of water, and lett them boyle an houre. In the meantime, when it's begun to boyle, take ye white of an egg and beat it very well with a pint more of water, and put it in; then scum it very well; this will help to make it clear; then if it be not very clear, put it through a clean flannin into a clean eask and elay it up very close, letting it stand half a year. Then bottle it, and let it stand half a year before you use it. (The elaying-up was the plastering of stiff elay round the bung, to ensure the perfect exclusion of air.) *To Make Small Mead.*—To eight gallons of water, put one gallon of honey, 3 lbs. of loaf shuggar. Boyle and clear with whites of eggs. Keep it scumed for an houre, till it clears; then put in it mace, cloves, cinnemon, and ginger. If you think tit, let it boil an houre longer. Take it off ye fire and infuse with ye juce of six lemmons: when it is cooled, clear it from ye sedments into a barrel, with six or eight spoonfuls of new ale yeast, and a good handful of barm and sweet bryer. When it has done working, close it up in ye barrel, and after it has stood so a fortnight, bottle it up, with a bit of loaf shuggar in every bottle. (Good mead is no despicable liquor. The bee-keeper may make it at no appreciable cost by soaking the combs in cold water after the honey has been drained out; by thus washing the combs, sufficient honey is obtained for the purpose. The liquor when boiled, and a bag of spices in it, a little lemon juice and rind, and then cleared and worked, as in the above old receipts, makes excellent mead.)—*From a great-grandmother's Receipt-book a century and a half ago.*—Morning Cloud.

Errata.—In last Number page 541 last line but one first column, instead of '1881' read '1876.' It was in 1876 that the late Mr. Hunter imported the first dovetailed sections from America which we purchased of him, and it is these sections that our esteemed correspondent Mr. A. G. Radcliffe alludes to at page 537 of *Journal*.

P. 537, col. 2, line 11 from bottom, for '2 lb.' read '2 in.'

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Burtt, E. J., Stroud Road, Gloucester.
Edey & Son, St. Neots.
Hole, J. R. W., Tarrington, Ledbury.
Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Stothard, G., Welwyn, Herts.
Walton, E. C., Muskham, Newark.
Wren & Son, 139 High Street, Lowestoft.

HONEY MERCHANTS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
British Honey Co., Limited, 17 King William St., Strand.
Country Honey Supply, 23 Cornhill, E.C.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Walton, E. C., Muskham, Newark.

FOREIGN BEES AND QUEENS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Benton, F., Munich, Germany.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
Simmins, S., Rottingdean, near Brighton.

METAL ENDS.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Lyon, F., 94 Harleyford Road, London, S.E.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.

COMB FOUNDATION.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
Howard, J. H., Holme, Peterborough.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
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Editorial, Notices, &c.

BRITISH AND AMERICAN INVENTIONS.

Quite a lively discussion has arisen in respect to the conversational meetings lately held, and in which our Canadian friends took part. British bee-keepers, we are glad to find, are not likely to have their cause neglected for want of champions, amongst whom we are pleased once more to welcome our esteemed correspondent 'A Renfrewshire Bee-keeper.' We should not have interfered with the correspondence, as we always think it better to allow free discussion, so long as it is kept within proper limits. But in this case a few mistakes have crept in which, we think, should be corrected.

We were present at the meeting held on the 6th of October in the Conference room of the Colonial and Indian Exhibition, and we certainly did not see anything that could be called 'toadying.' British bee-keepers were there as the entertainers, and courteously listened to what our Canadian visitors had to say upon their systems of working. The criticisms were lively, but always carried on in a friendly spirit. At this meeting Mr. Sambels asked Mr. Jones if the Heddon hive did not resemble the Carr-Stewarton, and it will be seen by the report in our *Journal*, on page 474, that 'Mr. Jones agreed that the Canadian hive embodied some of the principles of the Carr-Stewarton hive.' We think our correspondent, 'A Renfrewshire Bee-keeper,' made an unconscious mistake in saying that 'only seemingly one voice was raised,' 'that of Mr. C. N. Abbott.' This gentleman, however, much to the regret of us all, was not present at the meeting. The same applies to the remark of Mr. Hooker on page 559, for Mr. Cowan was not present at the meeting on the 20th October, at which Mr. Raitt is reported to have made the assertion alluded to. Had we been present we could have corrected the statement as to 'systems,' but we quite agree with Mr. Raynor that many, we cannot say 'nearly all,' of the appliances have been furnished us by the inventive genius of the Americans; and we quite agree with Mr. Hooker that many of these, more especially the hives, have been and are far better made with us than they are in America. We do not forget, too, that the Americans have taken a great many ideas from us, which, unfortunately, they do not credit us with, and we are frequently amused and have often alluded to inventions brought out by them long after they have been in use in Europe. We know the storifying system is as old as the hills, and Hartlib wrote about it in 1655, and J. Gedde, after seven years' experience, published his book in London in 1675. Mr. Raynor has been acquainted with these authors and the system for more than forty years, and we have ourselves practised it since 1864, and from that time have never been without a Stewarton hive, and we have frequently alluded to the system in the *Journal*. We do not see that anyone here has given the Americans credit for the invention of the system, and certainly not Mr. Raynor, who compared the improvements made by the English, on American inventions, to 'the Stewarton hive which had brought about the Carr-Stewarton hive, which was a similar construction to Mr. Heddon's.' This certainly keeps the credit of the invention of both the Stewarton and the Carr-Stewarton to ourselves, and we cannot see how it could be construed into giving the Americans the credit of inventing it. Unfortunately, however, our correspondent cut the sentence in the middle, and thus made the sense quite different to what we are sure Mr. Raynor either intended or said. We know that storifying had been practised long before the Americans ever thought of bee-keeping, and the supers we exhibited in 1874 and subsequent years, both in Stewarton boxes and worked on the top of frame-hives, were obtained on this principle. But although these and other supers of those days, as well as the splendid even lot shown by the Scotch in 1874, were fine, we must give the Americans credit for inventing and, we may say also, for perfecting sections, which have been the means of popularising honey and bringing it within the reach of every one. The credit of introducing them into England belongs to the late Mr. Hunter, and we recollect when we purchased the first lot of dovetailed sections from him in 1876, which were of Root's make, how they were admired by all who saw them. The Americans do not, as a rule, know much of what is done out of their own country or we should not have such statements made by an editor as those we alluded to last week. Even at the present moment the lie, that Hoge bribed an ex-Lord Steward and by that means got American honey introduced on the Queen's table, is going the round of the American papers, and we suppose is believed by an easily gullible public. Although we know the result of this scandalous lie and the manner in which Hoge was punished, we do not think one of the American papers has ever alluded to it. We give this as a specimen of how the Americans are kept informed of what goes on in Europe. Even in the last number of the *Canadian Bee Journal* we find this story repeated.

We remember perfectly well using comb-foundation since 1864, but that made in those days was very different to what we use now, and not till the manufacture was perfected could it be used in full sheets as it is to-day. We used both the imported, supplied to us by Mr. Neighbour, and the Scotch sheets, and had a pair of plates, but we frequently found this founda-

tion giving way when full sheets were used. Although these were useful in their day the roller-made foundation is so superior that no bee-keeper will grudge the Americans the inventive genius which perfected these machines. We are sorry we were not present at the meeting on the 20th October, as we could have made some remarks on the discussion. We must say we were astonished to find when 'Mr. Jones asked if any one had ever tried brood-combs less than 1½ inches apart,' to find no positive statement on this subject. We have always insisted on frames without distance-pieces, pins, or projecting shoulders, with the very object of being able to bring them closer together, or put them further apart, at will, and have several times alluded to it in the *Journal*, and have even recommended the frames being placed 1¼ inches apart, to prevent the production of drones, and also to prevent swarming, and yet in the bustle of conversation this had been overlooked. We know Mr. Hooker was present at the meeting, and who was there better able to stand up for the rights of British bee-keepers than he, being practically conversant with what has been done during the last twenty-five years, and we are glad to find his protest coming 'better late than never?'

It was amusing to read the discussion on propolis and to find that there was an idea in the minds of some that it gave the yellow colour to wax. Mr. Corneil was much nearer the mark when he said he thought the colour due to pollen. In 1885 Dr. de Planta published his analyses and researches on the colours produced in different kinds of wax, and conclusively showed that the colour is due to pollen. For instance, he has shown that the pollen from sainfoin being reddish-yellow the wax is always this colour, whereas the pollen of heather being nearly white the wax produced from this honey is also nearly white. It might also be interesting to our readers if we tell them that Della Rocca in 1790 pointed out that sun-flowers produced a resinous substance which furnished much propolis. We are sorry Mr. McKnight had not tasted English honey, for we took care to let our Canadian friends have specimens of the best English clover honey and the best heather honey we could produce. We cannot, however, endorse the views of Mr. McKnight, that the time would come when the British bee-keepers would have to depend on the production of comb-honey alone. We believe that extracted honey can be produced at a profit and that there will be a market for it all in the future, and that notwithstanding the competition with our colonies—who although they have climatic advantages over us, which all must admit—have to add the cost of carriage on the cost of production of their goods. This exhibition of Canadian honey and the meetings held would have done some good in that it has roused British bee-keepers, and amongst the advantages is that of our once more seeing the signature of our old friend 'A Renfrewshire Bee-keeper' in the columns of the *Journal*, whom in common with Mr. Hooker we are glad to find still takes an interest in bee-keeping.

APPROACHING DEPARTURE OF THE CANADIAN DELEGATES.

Three months have well-nigh elapsed since the freight of Canadian honey reached the Indian and Colonial Exhibition; and the time is now fast approaching when the delegates, who have so worthily represented the bee-keepers of the Dominion of Canada, will have left our shores, bound for their respective distant homes. Their visit has been an event which the bee-keeping world will not easily, or soon, forget. The very prospect of their advent amongst British bee-keepers was as the casting of a stone into a placid lake. It stimulated them to put forth their best and their bravest efforts to prove to the public the capabilities of their own country to produce honey proportionate with any demands that might be made on them,—and honey, too, of a quality and a flavour that was equal to that of any other country. Through the energies of the British Bee-keepers' Association and the good offices of our President, an opportunity was given to bee-keepers to display to the public their honey in a most favourable manner. They had the privilege of occupying the Conservatory adjoining the Albert Hall,—a position in every way commodious and eligible. The time of the exhibition was, too, most opportune, as it embraced the Bank holiday, and consequently a large portion of the British public were able to witness the products of the honey-bee in a most striking and interesting manner. Time and circumstance would not permit, as had been hoped, that the two exhibitions, British and Canadian, should have been held simultaneously, and that there should have been afforded an opportunity of English manufacturers of appliances and the producers of honey within the United Kingdom of comparing results with our Canadian brethren. The sequence, however, of the two displays, and that of the Canadians being prolonged till the close of the Exhibition, has done much to create a desire in the public for honey,—a desire which, we trust, the British Honey Company, and honey-producers generally, will do their best to continue and develope. Five weeks elapsed between the two exhibitions, and the public which had witnessed the display of British honey had a favourable opportunity of witnessing and comparing the products of the two countries. The feeling that the presence of foreign honey in our midst would be injurious to the sale of British honey has passed away; and it is now generally believed that it will rather promote and increase it.

The coming in contact with those excellent and worthy representatives of Canadian bee-keepers —Messrs. Jones, Corneil, and McKnight—has conferred a benefit on the British bee-keeper. It has roused him from a sense of his isolated position; it has enlarged the horizon of his ideas; it has evoked the kindliest feelings of his heart towards those engaged in the same pursuit as himself; it has increased his knowledge of bee-keepers and bee-keeping; and it has knitted his best energies for future work. We have met our Canadian friends at the social table, at public conferences, at private meetings, and in domestic circles, and the impression conveyed to the hearts and minds of all has been that of the most favourable description.

It has been reserved to the Hertfordshire Bee-keepers' Association to have the honour of spending the last Conference with our friends. We notice in our last that the Essex B.K.A. were disappointed in not having the presence of the delegates at their annual meeting. The Hertfordshire has succeeded where the Essex failed. Enthusiasm in bee-keeping has been the motive force which has enabled it to sweep aside every obstacle, and to conduct so hearty and so successful a meeting.

We think few Associations in the kingdom could have found their members making so many sacrifices to be present at such a Conference as did those of Hertfordshire. From the lengthened report which we have given, our readers will have an opportunity of ascertaining the feeling which animated the meeting; and we can scarcely read this report without having the sentiment rising in our minds that the Hertfordshire bee-keepers have, by their devotion to the cause of bee-keeping, given a stimulus to all the Associations affiliated with the British. By thus working in the first place for the honour and benefit of their own county, they will be found to have been working for the whole bee-keeping fraternity. Emulation does not merely consist in contending for prizes at stated times and at certain seasons, but in that of steady continuance in well-doing throughout the whole year. Therefore are we pleased to be able to congratulate this county in having the opportunity of saying farewell to our departing friends, who we trust will reach their homes in safety and in peace, and will in future years have many warm and precious remembrances of the time they have spent and the friendships they have formed during their visit to the old country.

ASSOCIATIONS.

HERTS BEE-KEEPERS' ASSOCIATION.

Quarterly Conference.

Conference with the Canadians.

A quarterly Conference of the Hertford branch of the above Association was held on the 29th ult., at 7.30 p.m., in St. Andrew's school-room, Hertford, which was filled by an appreciative audience, who assembled in large numbers for the purpose of hearing addresses by the Canadian Honey Commissioners, who kindly attended on the invitation of the committee of the local Association. Among the ladies and gentlemen present were the Mayor of Hertford (Mr. R. Cocks), who presided; Mr. and Mrs. Jones (Ontario), Mr. S. Corneil (Ontario), Mr. J. P. Sambels, the Rev. J. Lingen Seager (Secretary of the Herts Bee-keepers' Association), Mr. S. Allen, Mr. Buller, Mr. Jackson, Mr. R. T. Andrews, Mr. T. B. Blow, and Miss Gayton.

The Chairman, in opening the proceedings, said he had great pleasure in presiding at that meeting. The executive of the local Association had paid a great compliment to the Mayoralty by asking him to do so. He felt sure they would all unite in giving the Canadian gentlemen a hearty welcome to the ancient town of Hertford. Unfortunately his knowledge of bee-culture was extremely limited, but he was glad to see that the subject was becoming more and more popular. Periodical conferences, like the present one, were calculated to promote that end. He would listen with the greatest pleasure to the practical remarks of the gentlemen who would address them during the evening.

Mr. Andrews (Secretary of the branch) said it was with feelings of unmixed satisfaction that he rose to say a few words to them respecting bee-keeping in the Hertford district, especially as that meeting was one of exceptional importance, owing to the presence of their distinguished visitors. He hardly expected the Hertford bee-keepers would be fortunate enough to secure the attendance of those gentlemen, but their efforts to do so had happily succeeded through the kind offices of some local friends, amongst whom special thanks were due to Mr. Sambels. On behalf of the Association he tendered the heartiest welcome to Mr. Jones and Mr. Corneil. It was exceedingly kind of them to come there that evening in support of the proceedings, and for the purpose of giving the benefit of their experience, and in fact bringing themselves down to the level of the small and humble bee-keepers like those in Herts. He thought English bee-keepers must all feel most cordially towards their Canadian brethren, for were they not brothers? They sprang from the same stock as Englishmen, and were under the same queen, and it was but natural that bee-keepers in the old country should hold out the right hand of fellowship to their friends across the Atlantic (cheers.) He had, as they all knew, the interest of bee-keeping at heart, and he wanted to see it flourish in Herts. It was for that reason that the system of holding conferences from time to time had been established; and although many circumstances had happened to disturb arrangements—amongst other things the Colonial and Indian Exhibition meetings of the B.B.K.A.—so that no Conference had been held since last March, it was thought desirable that the periodical meetings should be given a fresh start by means of an influential meeting like the present. He saw before him many practical bee-keepers, and indeed most present knew something of the subject. However, probably they would not like to stand up and speak on it, but had come there more in the capacity of learners. He was there himself very much as a scholar rather than a teacher, and he looked forward to learning something new in common with themselves. With regard to the production of honey in the Herts district, he could only say that the present year had been a most disastrous one. They had not obtained the amount of honey that was secured the previous year, nor anything like it. There were several things which militated against their success, such as cold, rainy and windy weather, which of course had a bad effect on the bees and flowers too. Wherever he went he heard the complaint of no swarms, or but few swarms. Of course there had been exceptions to that rule, but in every one of these cases the production was smaller than that of the previous year, which was a very favourable season for the Herts bee-keepers. He himself had had a fortunate experience during last season.

Mr. Corneil said he was sure that Mr. Jones and himself felt themselves highly honoured in receiving an invitation to attend a meeting of bee-keepers like the present one. Ever since they had landed on British shores they had experienced the utmost kindness and consideration from their English brethren. Mr. Andrews, the Secretary, had just expressed himself in the kindest terms towards them. He could assure that gentleman that his compatriot and himself felt it a favour to be allowed to say a few words to the intelligent audience of co-workers whom he was now addressing. The history of bee-keeping in Canada was a large subject, and he hardly knew where to commence, or what phase or branch of it would be most interesting to the bee-keepers present, but if during the course of the proceedings information should be wanted on any particular matter connected with the management of hives, &c., he would be happy to supply all the knowledge in his possession on such subject. At the same time he had a great deal to learn, and looked forward to the prospect of gaining fresh data from a recital that evening of the experience of their English friends.

Upon being called on by the Chairman to address the meeting, Mr. Jones complained that his Canadian friend had an artful way of getting out of a difficulty, and placing it upon somebody else's shoulders (laughter.) From what Mr. Sambels had told him (the speaker), he understood that Mr. Corneil would take the lion's share of the work that evening. However, he (Mr. Corneil) would not be allowed to escape on a subterfuge (laughter), but must do his share later on (laughter). He (Mr. Jones) was very pleased to see so many present that evening, and to observe the great interest mani-

fested in England regarding bee-culture. He thought they were not at all behind the Canadians in the science. He quite agreed with the previous speaker that the invitation to attend that meeting was an honour bestowed on himself and friend. They would not be surprised to hear that it always afforded him real pleasure to meet and converse with bee-keepers. Like Mr. Corneil, he felt a little at sea, and hardly knew what topic to select in speaking to them; that was, what particular points in relation to apiculture would most interest his hearers. He might be telling them a great deal of which they already knew, and did not care to hear. The matter of queen-rearing was most important, and no doubt would be interesting to some present; and as he had practised that largely, he thought it desirable to say a few words thereon. In the first place, it was not necessary to tell them, that in the case of a weak colony, if queens were being reared, and care was not taken, the queen-cells would be torn down as soon as the first queen was hatched. If, on the other hand, the colonies were very strong, the cells would be allowed to remain. He found the best way to avoid difficulties of that kind was to add brood to a colony until it became three or four times as strong as it should be for ordinary purposes, and allowing them to start queen-cells. That should be done in the height of the season. Queen-rearing in the spring or fall was a failure. He would describe the process. The comb was taken out of the hive and lightly tapped, which caused all the old bees to return, and after a cloth had been spread out in front of the hive to be strengthened, the bees were shaken out thereon, three or four feet from the entrance, when they proceeded to run in and were received. It was an easy matter to make any colony very strong in a short time by this method. And the colony was at once induced to start queen-cells, which were built under the swarming impulse in the natural way. If the honey flow should stop, it would be necessary to feed during the operation. Queens raised by this method were more vigorous, were larger and better in every way, as a strong colony when under natural impulse built their queen-cells larger, and undoubtedly fed the royal grubs better than a weak nucleus. On the seventh day the queen-cells should be cut out and given to other bees, and they will all hatch at the same time. If the cells are not cut out on the seventh day they would not be destroyed, as if the colony were weak, for the reason that the bees want to swarm, and would not allow the queens when hatched to get out of the cells. If they should get out, the bees would ball them, and prevent them destroying the other cells. He had known queens to be kept in the cells for twenty-four hours, and fed, so that when they got out of the cells they could fly. By cutting out queen-cells just as they are about to hatch, and placing them in queen-cages and giving them to a queenless stock from ten or twenty cells could be saved in every ordinary hive, but if there should be a little Syrian or Cyprian blood, the number may mount to a hundred. He had had eighty queen-cells on a single comb. Those queens were more vigorous than queens raised in an ordinary way. Professor McLean said that that was also the best system for raising drones. Drones raised under the swarming impulse, in unusually strong colonies, were of more value than drones raised in weak colonies. He (the speaker) invited the audience to question him on any matters of detail which they did not fully understand in reference to the foregoing remarks. There was another branch of apiculture on which there had been a good deal of discussion, namely the spreading of brood. It was a practice which he had advocated under certain exceptional circumstances; but it was a very dangerous practice, speaking generally. A first-class bee-keeper who thoroughly understood the subject might do it with success. The difficulty was to know what the weather was going to be. If the brood was spread on a cold night, chilled brood would most likely result. If two combs are filled much fuller with brood on the inside than the outside, lift them up, turn them round, and set them in again. After reversing the combs once or twice, the colony would be increased without any danger of chilling the brood, that was a much better system than spreading brood by putting empty combs between, which was dangerous. Canada was, without doubt, a very favourable country for the production of honey, but it must not be supposed that it was obtained as easily as pumping water out of a well. Of course in that country there was a great deal more bee-pasturage than in England, where the land was better cultivated as far as agriculture was concerned. In Britain all the original forests had been cut away, whereas on the other side of the Atlantic they still remained. They had an immense quantity of lindens over there, from which during some years they obtained as large a quantity of honey as was produced from clover. In places where linden-trees were scarce, bee-keepers had to rely mostly on white clover for their honey crop. The eastern provinces of Canada and Nova Scotia, where icebergs were to be seen during a great part of the year, were not very good farming districts, and they produced a great deal of buckwheat and white clover. Buckwheat honey was very much like English heather honey, though not quite so strong in flavour. The principal sources of honey in Canada were linden and white clover, most of the products of which no doubt had been seen at the Colonial Exhibition. The Canadian thistle, which was the same as its English namesake, did not yield honey every year, but at certain seasons it produced a very large crop; and he thought that if the farmers in England would allow one-third of their land to be thistles they would obtain an immense crop of honey (laughter). As a bee-keeper he would be glad to see that, but as a farmer he would be sorry for it. In Canada they made it a practice not to weed out the thistles, and in some parts when the crops were standing one might see almost as many thistles as corn. Thistles grew vigorously in a wet season, and produced more honey than in dry seasons. The first produce that the bees obtained in Ontario was willow honey. He was not so well acquainted with the different sources of honey in other parts of the country. They must remember that Canada was an immense territory and that the climate differed according to the locality. He knew it was the custom generally in England to look upon that colony as a land of ice and snow where they would only freeze to death. That was a great fallacy. If they had seen the 3200 plates of apples, pears, and grapes, exported from Canada and grown in the open, which were shown during the last four weeks of the Exhibition, they would have some idea of the products of Ontario. Of course in England they had plenty of money and could rear these fruits under glass if not out-of-doors. There was no doubt that Canada was well adapted for farming and bee-keeping, and he would advise any who thought of emigrating there to mix up general farming and market gardening with bee-keeping. Bee-keeping was really the only honest way by which a man could steal his living (laughter). There was only one farmer in ten that kept bees, and yet there was no reason why they should not gather the honey that would go to waste there. In some locations there were millions of pounds of honey going to waste—places where a continuous honey flow from spring to fall could be obtained. The season commenced as soon as the snow was off the ground, when, as he had already explained, the willows afforded the first crop. Then came three weeks of fruit blooms, after which the maple began to blossom; and after another three weeks or thereabouts the clover bloom appeared; then the lindens, thistles, and other flowers, and so on. Land was undoubtedly very much cheaper on the other side of the Atlantic than in

the old country. In some of the finest parts of the Dominion—in Ontario, for instance—there was land worth from 5000 to 10,000 dollars per 100 acres. There were people who believed so much in the value of bee-culture to the farmer that they offered locations for nothing on their farms. He had in one locality about an acre of ground with a dwelling-house for the bee-master, which he had occupied for six years and for which he paid no rent at all. In other cases he paid from five to ten dollars a-year for an acre of land to place his bees on. Any one could rent a house in his neighbourhood for from three to five dollars a month, which would include sufficient ground to keep some colonies of bees. And for from 10*l.* to 15*l.* a-year a good house with shop and grounds necessary for carrying on operations could be obtained—quite enough in many instances for a market garden. The general rent of farm land ran from 12*s.* to 16*s.* per acre, never more unless very favourably situated, never much less than 5*s.* or 10*s.* an acre. Where there was such a large population as in England, and scarcely elbow room, he could not suggest a more excellent change than that some of its enterprising inhabitants should pack up about the 1st April or May and make a voyage to Canada, and find out from personal experience what sort of a country it was. It was quite certain that Canada had many advantages over England both in the way of farming and bee-culture. It was owing to the cheap pasturage over there that they were able to supply so large a quantity of beef, butter, and cheese. Canadian beef was to be found on every butcher's stall, as well as cheese from that country at every grocer's in London. Still there were millions of acres lying idle in the Dominion, and he was persuaded that a poor man could make a very good living over there by carrying on farming and bee-keeping at the same time. He felt satisfied that bee-keeping was only in its infancy in Canada, but there were even at the present time so many people engaged in it as a business, who would be willing to teach others, that there was no location in which an amateur might settle where he would not find a good bee-keeper within a short distance of him. They had also a Bee Journal in Canada, and of course they got the English Bee Journals. He thought the *British Bee Journal* and the *Bee-keeper's Record* were both ably edited papers and were a credit to the mother country. When he and his friend were about to come over they were told that because they were bringing honey with them they would 'get the cold shoulder.' He did not believe that, for he knew that he could claim kinship with Englishmen, his great-grandmother, or some such remote relation, having been English, and his better half was Scotch (laughter). His friend Mr. Corneil was a mixture of English, Irish and Scotch (laughter). Well, to tell the truth, they had been so well treated in the old country that they did not know how to leave it; and perhaps it was true, as had been said, they did not try to sell their honey quickly at the Exhibition because they wanted to stay as long as possible. He hoped they would not think he was vaunting too much the advantages of Canada. He had no land to sell to any bee-keepers, but he would do everything in his power to assist any desirous of emigrating by giving them all the information he possessed, and he would be happy to answer any questions, or supply any data respecting bee-keeping either in the columns of the *Journal*, or by private communication if desired (loud cheers).

Mr. T. B. Blow exhibited a hive for which he claimed the advantages of the Heddon hive, which was so popular in Canada, and which also was adapted for using the present British standard frame. (Want of space compels us to hold a description of this hive over for a future number.)

The Rev. J. Lingen Seager said there was only one thing which could equal the Canadian honey flow, and that was the flow of Canadian eloquence which they had heard that evening (laughter). He thought Mr. Jones' remarks contained a mixture of the prudence of the Scotchman, the humour of the Irishman, and the common-sense of the Englishman (laughter). He hoped to have the pleasure of hearing some remarks from Mr. Corneil; and if he might suggest a topic upon which they, in England, required some information, it was in reference to wintering bees. He had noticed that it was a common thing in England to see hives looking prosperous during the honey-yielding season, but in the early spring a large proportion of them were in a very miserable state. He was afraid bee-keepers were too apt after securing all the honey they could, to leave their bees to chance during the winter. Their want of success was no doubt often due to ignorance, and he confessed he was one of the ignorant people. He had heard that it was the fashion in Canada to put the bees in cellars. In England where cellars were available for such purpose they would generally be too damp. That would be so certainly in his own case. Some system should be devised by which they could winter their bees satisfactorily above ground. He thought the Herts Association had taken a judicious step in obtaining the assistance of Messrs. Jones and Corneil that evening, and it was another feather in their cap. He would not detain them further, but would be glad to hear from Mr. Corneil what he thought was the best way of wintering, the number of frames to which the hives should be reduced, the way they should be covered up and clothed for winter, something about the number of bees to be put into the hives. Was it advisable to unite a dozen hives into eight or six, or to allow the whole number to stand side by side all the winter as he knew some bee-keepers did? He also wanted to know when the bees should be allowed out: was it desirable that they should be permitted a sniff of frost? He would also like to know something about feeding bees for the winter, whether honey or syrup should be used. In fact, any information from Mr. Corneil would be sure to be practical and useful (cheers).

Mr. Corneil said that he wintered his bees in a small cellar, too small for his stock, because it only contained about eighty hives. He always took care to allow sufficient space to enable him to walk round the hives. He liked to inspect the inmates once a-week or fortnight to see how they were getting on. It was very important, in his opinion, to maintain a uniform temperature in the cellar, which should never be lower than 40° Fahrenheit. If it went up to 50° no harm would be done. If he could keep the temperature uniform at 48° during the whole winter he would like to do so. His own cellar was too damp according to his view, although he had gone to considerable expense in order to render it suitable for wintering bees properly. However, a mistake in the works was made in the first instance which it was exceedingly difficult to rectify. He then gave a detailed explanation of the way in which his cellar had been concreted against dampness, and a pipe laid down in a trench for the purpose of conveying pure air to the cellar. That air was then heated in order that it should not contain more than about 70 per cent of moisture. He found, however, that the per-centage of moisture in his cellar had risen to nearly 90, which was too much. Still, the bees wintered fairly well. The reason of the failure in the working of the pipe was that it was laid partly in quicksand, which gave way, and the joints broke and let in a quantity of water. The consequence was the work would have to be done over again. Of course the air was not dry because it came over a body of water. To counteract that evil influence he had taken care to give the cellar plenty of ventilation. In wintering, he always raised the body of his hives two inches above the bottom boards, and left the intervening space perfectly open.

He covered the hives with a quilt of wool made for the purpose 18″ × 20″. Wool was a bad conductor of heat, and a good substance for passing off moisture, which they all knew from its universal adoption in the way of clothing for human beings. He did not believe in cloth quilts, which were harmful unless their effect were counteracted by extra ventilation. He had frequently gone into his cellar and pulled aside the edges of the quilts and taken a peep at the bees, which were generally in a large mass close up against the wool, and were so nearly hibernating that they hardly stirred. Under those circumstances he had pushed in the bulb of a thermometer without causing much annoyance to the bees. They were allowed to remain in winter quarters until there was pollen and water for them to get. As to food, he did not think there was anything so good as honey. As to what honey should be used he did not think there was any great difference. The question whether honey gathered at the fall of the year was as good as that obtained in early spring had been discussed in bee papers. He then explained another system of wintering bees common in Canada, which was to place them in a chaff bin, board up the top and sides, and fill up the spaces with chaff, taking care to give ventilation of course. With regard to moving from one location to another in order to follow successive blooms it was quite an undertaking and involved a good deal of trouble and did not often pay. He had tried, but with poor results. With regard to feeding on syrup, his bees had done well on such food, but he had a preference for natural stores. Mr. Jones spoke of fruit-blooms, but he did not think the bees gathered much from these. If they got enough to stimulate brood-rearing they did well. He knew there were some locations in which there was to be found a large undergrowth of wild cherry, which appeared in the season of fruit-blooms, the honey from which has a very stimulating effect in the early spring. He was not fortunate enough to be in a location like that. By the 15th June the white clover commenced to give honey, and by the first days of July in his district they were ready to extract from the top storey. In working for extracted honey, they put ten frames in the lower storey, and ten above. Of course, in Canada they worked matters in reference to bee-keeping on a much larger scale than in England. They had not so many hands, and perhaps it was for that reason they cut off more corners. Those remarks applied equally to farming work, so far as his observation in England had allowed him to judge. He then gave a full and interesting description of the way in which the business of extracting and replacing combs was conducted in the larger apiaries of Canada. He himself had three large tanks, ten inches deep, each of which would hold 1000 to 1200 pounds of honey. It was necessary to keep a large quantity of honey exposed to the air, in order that it might ripen and evaporation take place, so that it might become dense enough to pack. It was tried by the hydrometer, and never put up in any packages until it had acquired a density one-third heavier than water. He again thanked them for the cordial reception they had given him and Mr. Jones, and also for the kindness with which they had listened to his remarks (Loud cheers.)

Mr. Sambels said, since their last Conference they had had their great honey show in the Conservatory at South Kensington, where Herts had won the second prize in the county competition, and many of the prizes for appliances had been won by manufacturers in the county. They had also had the Ontario Honey Exhibit which had brought our Canadian friends to England, and had been of great interest to bee-keepers generally. Through the kindness of our friends, he was enabled to show them several samples of Canadian honey. He had also bought a few samples from the Herts county stall at our late show, which he felt sure was able to bear comparison for its 'gold' colour, as well as its flavour. We had been taught by our Canadian friends, who had from 1200*l.* to 1300*l.* of John Bull's money to take home with them, a good lesson in free trade, by admitting their honey duty free, and providing cheap tin boxes, duty free also, for them to put their honey up after it was brought over, and they in return had given many thousands in this country a taste of honey, probably for the first time. We had 'croaking' queens as wells as croaking bees, and not a few croaking bee-keepers, who were alarmed at the prospects of being flooded with Canadian honey, but for himself he looked forward to a larger sale of our native product through the taste thus created (applause). The speaker then exhibited a 2*d.*, 4*d.*, and 6*d.* tin box of honey, a 1-lb. and 5-lb. glass bottle, several sections of various brands and shapes, commenting on the fine finish of the latter. Also a small crate containing eight sections, explaining there were a large number of such on sale at the Ontario honey-house, and said as Mr. Jones had expressed regret before the conference began that he had not brought a few samples with him, he had great pleasure in asking the Chairman to accept a bottle and section of Canadian honey, as well as one of our own county, that he might compare the flavour. He also explained a Dines' section-crate, as well as a new one of his own, in which he had freely appropriated what he considered points worth copying in every one's else that he had seen, and illustrated Mr. Corneil's method of fixing foundation.

Mr. R. T. Andrews asked several questions of Mr. Corneil.

Mr. Corneil, in reply, said the Canadian thistle honey was quite white, and the flavour very distinctive. In the early part of his bee-keeping experience he used to take his bees out once or twice during the winter for an airing, and he found they would fly back to the same place where their hive had been kept in the summer, but he always now kept them in all the winter and never found them to select the same location, although he placed the hives quite indiscriminately.

Mr. Seager said he would not adopt the usual custom of proposing a vote of thanks to our Canadian friends, but he felt quite sure, under the circumstances, he should be best expressing the feeling, not only of this meeting, but of British bee-keepers generally, by wishing them a hearty farewell and a pleasant and prosperous voyage home.

Mr. S. Allen seconded the proposal, which was carried by acclamation.

Mr. Corneil, in returning thanks, spoke of the advantages of Canada to intending emigrants. They could boast of greater longevity, of being more healthy and stalwart, their babies were heavier, and their families more numerous, than in any European nation, twenty or twenty-four being no unusual number (Oh, oh!).

Mr. Jones said they would take home with them such a sense of the very great kindness and generosity that they had received from Englishmen, bee-keepers especially, that it would never be erased from their memories. They should be able to tell their friends at home that the feelings expressed to them were intended not for themselves as individuals, but to the Canadian nation as such; and if any of his English friends chose to come out to Ontario, nothing would give him so much pleasure as to show them over the Colony, and do all in his power to help them to settle comfortably in their new home, and on behalf of Canada, he could guarantee them a hearty welcome.

Dr. Shelly was sure that the meeting would accord a hearty vote of thanks to the Mayor for presiding over them on this occasion. A few days previously, Mr. Cocks had stated that the only qualification he could claim for taking the chair to-night was the fact that he had studied the manners and customs of the honey-bee as set forth in the writings of the Rev. Isaac Watts.

But Mr. Cocks had even better claims than that, for he was an excellent example of the human bee—presenting in this respect certain curious resemblances to, as well as differences from, his insect prototype. Thus he was, to begin with, a social animal; and it went without saying that, despite his sex, he was a good worker. He resembled the British bee in one other point, which was, perhaps, in his case an advantage,—his tongue was not quite so long as that of the foreigners. On the other hand, he was not intimidated by smoke, nor, as the speaker had good reason to state, was he rendered at all savage by it. With regard to carbolic acid—another 'quieting agent' sometimes employed by bee-keepers—he could not speak so positively, for there had, fortunately, been no occasion to experiment with it upon his worship. Lastly, the enjoyable and successful meeting which they had had that night was enough to prove that whatever Mr. Cocks set to work upon, it would never turn out 'a sell.' Perhaps, now-a-days, we are not quite content to take the little busy bee at Dr. Watts' valuation; but it had seldom done Englishmen a better turn than in bringing them, as it had done to-night, face to face with their brethren from over the great water—brother bee-keepers who came amongst them with no strange names, and no strange faces; urging them only to that kindly rivalry which is one of the healthiest signs exhibited by the various members of one family striving in mutual harmony for success. And it was a matter of congratulation that their meeting should have been presided over by a gentleman whom they could claim as a practical exponent of the best virtues attributed to the little insect which had been the theme of their discourse that evening.

Mr. Sambels, in seconding the proposal, said, although he was not a townsman of the Mayor, he was very pleased to see him, as chief magistrate of the ancient borough of Hertford, in the chair. Mr. Jones earlier in the evening had said bee-keeping was the only honest way he knew of getting a living by theft (Oh! oh!). He (Mr. Sambels) hoped the Mayor had consulted his legal adviser before he consented to preside, because all the clever devices that had been exhibited that evening were only to induce the bees to store the honey they had stolen from some other persons' flowers, as well as their owners', so that their owners might come in, on the divine right of appropriation, vulgarly called robbery, and take what the bees had stolen, so that their profession, above all others, required a suitable chairman to make it respectable.

The proposal was carried by acclamation, and the meeting separated.

Correspondence.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts* (*see 2nd page of Advertisements*).

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

BEES POISONED BY SYRUP CONTAINING ZINC SALTS.

[723.] I am invited to give some further explanation of this matter on account of its supposed importance. While endeavouring to comply, I feel that all that was absolutely necessary was communicated in the issue of November 18th, but that some interesting, and also some practical points have not yet been been touched.

All the zymotic (germ) diseases to which bees are subject, so far as I have as yet traced them, have a most singular effect over the fat cells. A larva fully fed weighs about the $\frac{1}{250}$ of a pound, and is loaded with fat. If it dies of chill (chilled brood), the fat cells are all found intact. If it dies of bacillus alvei, or any other micro-organism, the fat cells have nearly or absolutely disappeared, and the body of the larva is reduced to little more than half of the healthy weight, reminding us of the changes occurring in the human subject in the bacillus disease consumption. If the normal changes of pupahood are passed, the fat is used up in the process of development, and the same reduction in weight occurs, the bee leaving the cell only weighing about $\frac{1}{500}$ of a pound. In the larvæ sent me the condition of the fat cells indicated no wasting disease, and poison seemed the only alternative supposition. The query put by 'District Hon. Secretary,' Why did they not die during their larval state? is met thus: Larvæ are at first fed on secretion diet (bee milk), as I have somewhat elaborately explained in Vol. I. of my book, and so would not at first be so exposed to poisoning, even if poisoned syrup were stored in the hive. Later on, syrup is given them, and then the mischief begins, which does not terminate fatally till after sealing.

Galvanised iron is commonly supposed by those who have no scientific knowledge to prevent oxidation, or rusting, but this is the very opposite of the case. The iron is coated with zinc. While the coating is perfect, the vessel is to all intents a zinc one, but so soon as abrasion, or wear, exposes some of the iron, a galvanic couple is established, and since zinc is more electro-positive than iron, it attracts the electro-negative oxygen, and so tends to deoxidise the iron, or, in other words, to protect it. The zinc practically thus protects iron for some inches round it, and so until all the zinc is oxidised away the iron remains unrusted. Similarly steel goods are sometimes saved from rusting by keeping them in zinc cases, or wrapped in zinc foil. But the important point lies here. The presence of the iron *increases* the disposition on the part of the zinc to oxidise, and so galvanised iron is worse in its effect on exciting fluids (among which honey syrup salt solution may be classed) than zinc alone. Existing extractors, if made of this most desperately unsuitable material, may be protected by water-proof varnishes. Beeswax melted and then most strongly heated, while four times its own weight of shellac is injected into it, will do well for a coating, the melting-point of which will be near boiling point (212°), while wax alone melts at 150°. It is much harder too. But most bee-keepers will prefer to dissolve shellac in methylated spirit; putting the shellac into a well-corked bottle, and rather more than covering with spirit, is all that is required. Solution in a warm room will be effected in two or three days. Apply with a paint-brush, and give four or five days to dry, when add a second coat. This varnish will not injure the honey, is not affected seriously even by boiling water, and is durable. It is of the highest consequence that all traces of honey or syrup

should be first removed by most scrupulous and repeated washing. In the use of tinned iron, the iron is more electro-positive than the tin, so the iron goes and the tin remains. Where rustiness has commenced, a little of this varnish carefully applied will stop the mischief.—FRANK R. CHESHIRE, *Avenue House, Acton, W.*

[We are able to confirm Mr. Cheshire's statement as to the poisonous properties of galvanised iron and zinc. When we carried on our experiments on extractors, now twelve years ago, on rather a large scale, we were able to satisfy ourselves that these were not suitable metals, discontinued their use, and have ever since discountenanced them in every way. We have already, on several occasions, explained in the *Journal* that the acid in the honey acted on the metals, and have pointed out in the *Bee-keepers' Guide Book*, that neither zinc nor galvanised iron should on any account be used, and that all metal coming in contact with honey should be tinned. This is why we have always insisted on extractors being made of tinned iron only. Our experience quite bears out Mr. Cheshire's statement that when galvanised vessels begin to wear they are worse than zinc, and it is astonishing how soon they do begin to show signs of wear.—ED.]

CANADIAN HIVES.

[724.] Readers of the *British Bee Journal* in Canada have of course been deeply interested in the reports in its columns of the Show at the Colonial and Indian Exhibition, as it has been the most reliable source of information regarding the display of the Ontario Bee-keepers' Association.

In the issue of October 14th is a lengthy and likewise interesting account of the Convention of British bee-keepers and Canadians.

I always think that at these Conventions we should be very—extremely—guarded in our language, so as to leave no erroneous and misleading impressions with our friends and fellow bee-keepers, and especially should this be the case when we are well and favourably known to the public. Then, too, at the moment, reports are sometimes erroneous, or before they reach the public a misplaced word or misconstrued sentence has led astray especially those whose experience leads them to lean upon the opinions of the advanced, more than upon their own thought, observation, and experience.

In what I am about to say I hope I speak for the benefit of the readers of the *B. B. J.*, and to warn them, or, more properly, clear up any points which may have a misleading effect, and to answer, in part at least, 'Novice's' query on page 477 [631], regarding Canadian hives. One of the Canadian commissioners is reported to have stated that the improved Heddon hive is now the most popular hive in Canada. As I understand the term 'popular,' if it means the hive most generally in use, the hive which enjoys the greatest public confidence as being the best, there is an error somewhere. The hive referred to, I believe, was first spoken of through the columns of the *Canadian Bee Journal* in or about June. To the best of my knowledge—and I am pretty well posted as to apiculture in Canada—there was not one colony in the Heddon hive last winter; and there are also, to the best of my knowledge, not five hundred colonies in the hive in Canada to-day. So much for its popularity in that sense. I always understood that the destruction of queen-cells by reversing was not certain. I have no experience.

Now, I will not say that the hive is not in advance of anything in the non-reversible line; it may be. But we should be guarded, and not jump at conclusions in a matter which may result in an expense to many a bee-keeper who cannot afford to gain experience at such an outlay.

In Canada, as to hives, there are many; in some we extract from the brood-chamber, in others we have an upper storey which contains a full set of frames and is used solely for extracting honey. The brood and queen are kept below by means of a perforated metal honey-board, and by means of this contrivance and an extra set of empty combs, work can be done very rapidly. A wheelbarrow with two boxes, each large enough to contain the full complement of frames contained in an upper storey, and one filled with empty combs, is wheeled to the rear of the hive. In a few moments the full combs of honey are transferred to the empty box and replaced by the empty combs which, after extracting, are ready for the next hive. In some, as in the hive exhibited by E. S. Goold & Co. in the agricultural department, Colonial and Indian Exhibition, the comb honey and extracted honey supers are all one, for two comb honey half storeys make one full storey, and after the partitions are taken out the frames for extracting can be put in; the hive takes the improved Langstroth frame. The Jones hive, frame $10\frac{3}{4} \times 12\frac{1}{2}$ in., twelve frames to a hive, for number used stands about equal, I think, to the Langstroth, and it owes its widespread use to having been advocated by Mr. Jones, of Beeton, Ontario. Mr. Jones has improved this hive by making it shallower, laying his old frame upon its side and using an upper storey upon it.

Then there are a number of other hives, but the two enumerated have a decided lead and are in more general use; I mean the Jones hive, single storey, and an eight or ten frame improved Langstroth frame hive (with upper storey, irrespective of slight alterations about the hive itself, making it more or less convenient for manipulation). As to coming hives it is difficult to forecast. Of the reversible the Shuck and Heddon are the two rivals in the field. The Heddon has already been described. The Shuck I will describe very briefly. It consists of stand, the bottom and top boards are alike and reversible; one way gives an entrance—reversed, as lid, none. The improved Langstroth frame is used; it rests on the projection at centre of side bar, thus: -[ ]- The outer case is cut in two, and when these two are clamped together they, by means of the projecting rests, hold the frame firmly in its place. The frames can be spaced, separately inverted, or, as in the Heddon, the entire chamber can be inverted. The upper storey for extracted honey is the same. If one desires to winter on a deep frame, owing to the manner the frames are held in place, the chamber can be put on its end, and we have a deep frame.

For comb-honey supers, the surplus case can be reversed. Separators may be used or dispensed with. The sections have false tops and bottoms, so the bees cannot touch the outside of the section or soil them. A honey-board of metal or wood is used.

I will not here take up more room to describe our hives in Canada, and have made an effort to confine myself to that which will be of interest and may be of use to bee-keepers.

As to yield per colony, I have known 10,000 lbs. of extracted honey being taken from fifty colonies, and colonies doubled, and frequently a larger per colony, when few were kept. I consider a good average crop would be 80 lbs. extracted honey per colony, and double the number of colonies. Some can boast of more, but they are exceptions. — R. F. HOLTERMANN, *Brantford, Canada.*

QUEEN INTRODUCTION.

[725.] I see by the letter No. 719 that 'A. T. Wilmot' endeavours to throw some doubt upon the efficacy of the 'Law.' It so happens that at the time of introducing the queens (679) I was not cognizant with Mr. Simmins' method, and it was not until some time after

that, on looking over the early numbers of the *Journal*, I found it had been published. I only now wish that I had had the chance of introducing one or both of the queens during the day, as I am perfectly sure it would have been successful. The reason I took Hobson's choice was the fact of my being absent at business during the day, and not reaching home till after dark. Let me mention one instance to wit: A neighbouring bee-keeper, a friend of mine, found last spring that one of his stocks was queenless, he therefore procured a queen, and successfully introduced her direct *by broad daylight at midday*, according to the Law. One great advantage of this method is that during the autumn, when the queens have more or less ceased laying, at a favourable opportunity they can be removed, it not being imperative to have other queens at hand for introduction, as the stocks may be kept queenless any length of time (of course if there are any queen-cells formed they must be destroyed before hatching out), and as this is the season when spare queens are plentiful they can be procured at any time and introduced as opportunity offers. Further, it is not necessary to keep the queen alone and without food thirty minutes previous to introducing her, as is advocated in Mr. Simmins' plan, which I hope to give a trial next season, and feel sure that it will turn out quite as successful as the 'Law.'—NORTH DERBYSHIRE.

SCOTTISH BEE-KEEPING.

[726.] I was pleased to find by your last issue that the Rev. George Raynor now disputes the correctness of your report of his speech at the meeting of the British and Canadian bee-keepers held on 20th October, but, most unfortunately, it has stood unrepudiated by either the rev. gentleman or yet the so-called Scottish representative, Mr. Raitt, for the last four weeks. One can well fancy how such 'bunkum' in that time has 'misled the ignorant,' and, copied by the 'array of papers by which America stands at the head of all the world in bee-keeping,' it is positively painful to think how this muddle ofhistorical accuracy will be pointed to as supported by all the erudition of the B.B.K.A.

An 'Amateur Expert' ought to be about the last to maintain enlightening the people is 'a dog-in-the manger policy.—A RENFREWSHIRE BEE-KEEPER.

MEXICAN BEES.

[727.] Among the qualities to be desired in the bee of the future, a disposition *not* to sting must hold a very high place. This condition would he more than fulfilled if we could find a bee that had no sting at all. Something of the kind was spoken of once in the *Journal*—a bee found in some far-off country without a sting; but it was very small (if I remember, not much larger than a house-fly) with an unpleasant tendency to creep into men's ears; and, lastly, quite useless as a honey-gatherer. Lately, however, I have come upon a bee very much more promising—a *bonâ fide* working bee without a sting. The account of it will be found in a work of which the title is *Travels in Mexico by F. A. Ober* (Boston, Estes and Lauriat, 1884.) This is a very large and elaborate work, and apparently of great research and scientific accuracy. The bee referred to is found in Yucatan, somewhere near Uxmal; and Mr. Obers' account appears to be from direct personal observation: 'The bee-hives are emptied every six weeks. The honey is so fragrant at some seasons as to scent the house; and there is an added charm to bee-keeping in this country from the fact that the bees are stingless' (page 64). Is it not strange that this has escaped your contributors' notice, though the book must be familiar to Mr. Mudie and all his subscribers? Here surely is something worth looking after. How many guineas would one of *these* queens be worth? As I meditated on the passage I could not help repeating to myself, with a paraphrase, the well-known sentence of Latreille about the entomologist Kirby:—*Utinam alter exsurgat Bentonius qui hanc speciem introducat!*—S. L. B.

'SIZE OF FRAMES.'

[728.] May I remind your correspondent, G. Stothard, (716), that not only were 'the general body of hive-makers' consulted on this question, but also all the leading bee-keepers? This was done by circular sent out by the B.B.K.A. I would further remind Mr. Stothard that the special committee elected to decide the question of the size of a standard frame consisted of Messrs. C. N. Abbott, T. W. Cowan, F. Cheshire, J. M. Hooker, A. Neighbour, the Rev. George Raynor, the Rev. F. T. Scott, and the late J. G. Desborough. Your correspondent will find this information by referring to the vol. of *B.B.J.* for 1882.—A MEMBER OF THE B.B.K.A.

BEE-KEEPING IN IRELAND.

[729.] Having approached the time for going into 'winter quarters,' a word or two may not be out of place. This season was not a generally good one, although several obtained fair results, by having stocks ready at the proper time. One bee-keeper began in October, 1885, with one stock, which he purchased for 2*l*. In May last it filled a large super of twenty-one sections and gave out a swarm. I was sent for, and placed it in a new frame-hive, giving them old combs in the frames, which the bee-keeper got from a friend. The bees remained only twenty-four hours in it. They were again hived and placed in it, but only again remained a short time. I had to go again, took out the old combs, and placed new sheets of foundation, admitted the bees again, and they went to work steadily, and in a very short time gave good results. The parent hive gave out two more swarms, and these were again united and placed in another frame-hive. I attributed the great success to the fact that when I visited the apiary of Lord —— in spring, May 6th, I alternated the brood-frames with sheets of foundation, and the wonderful results took place within three weeks. These bees were never fed. Of course, the bee-keeper followed my instructions to the letter. I attribute great failures to would-be experts going about spending pretended holidays and doing all manner of useless manipulations at severe seasons. The above hive was never opened or looked at from the middle of October, 1885, till 6th May, 1886. I forgot to mention that the swarm also gave a crate of sections. The owner now finishes up with three good stocks and forty-two 1-lb. sections, well filled. There is no necessity for the cry we hear about a honey-market. I am well able to sell all the honey I like, and at any time I like. Here is an instance. A certain lord asked me where he could sell his honey. I gave a few addresses. Her ladyship worked the correspondence, and got wearied over replies stating, 'Send on samples,' &c. She said to the gardener, 'Send on the honey to Traynor, no matter what he gives for it.' I got forty sections sent me not a single one broken (packed according to my instructions). I asked my grocer to place some of them in the window, and in a few days all were sold, as follows: twenty at 10*d.*, ten at 9*d.*, ten at 8*d.* A friend near me (a known one) sent sixty to Glasgow, for which he got 1*s.* per lb. for thirty-one; after paying carriage, twenty-nine were broken, for which he received 5*d.* per lb. I have several demands now for sections. If bee-keepers would be satisfied with 9*d.* per section, there is no end to what honey may be sold. I have to give instructions for its use in all cases. We should ask our medicoes to lecture the people.—J. TRAYNOR, *Tinahely, Ireland.*

FOUL BROOD.

[730.] I am pretty certain that 'Man of Kent' is not at all singular in his experience of foul brood. You may think you have cured it, but it comes again. Also I have observed that people have a great aversion to admit that they have the disease. The only way I know of being sure of a cure is to divide a large hive with excluder, and as the combs get filled with brood place them behind the excluder, marking the date of removal on the top bar. After twenty-three days, if any is not hatched out, examine it, and it will probably turn out foul brood. But if after a reasonable time comb after comb is hatched out clean, I think it may be taken for granted that the hive is sound.

Mr. Cowan tells us that he has cured the disease, but I do not suppose that either he or anybody else ever did so with camphor alone, though it may have a good effect, and certainly the bees do not seem to mind it. Carbolic acid has a good effect, and if properly used, I believe, a hive, however bad, may be cured by it, but it requires more judgment and skill than most bee-keepers possess. Curing a hive and curing an apiary are, however, two different things. Calvert's No. 4 is the proper sort, and cost 2*d.* an ounce. No. 5 is too impure to be given in food. The purest made for surgical purposes is Calvert's No. 1, and costs 6*d.* an ounce, but I have not found it better than No. 4 for this purpose. The use, however, of carbolic in food is confined to certain times of the year, and even then the bees will not take it in the ordinary way. It must be poured into a comb and placed in the middle of the hive. They will not touch it for several days, but after that they will clear it out, when it must be renewed. You can't do this in winter, nor can you do it to a supered hive, or one you intend extracting from. Salicylic-acid solution in syrup is said to be beneficial. I cannot say that I have observed much effect from it, though I by no means deny it.

Mr. Cowan advocates the vapour of salicylic acid, which is used by some bee-keepers in Italy. If this can be shown to be really efficacious, it would be very valuable indeed. I have made some experiments, especially in devising a small handy machine for driving all the fumes, without loss, into a hive, skep, or frame, without disturbing the bees. In this I have perfectly succeeded, and am treating a dozen or more diseased hives. If in the spring I find the desired effect, I shall probably describe it. I am aware that something of the sort exists, but what I saw at the Colonial appeared to me very clumsy indeed. There is this advantage, that it can be used at any time, all the year round, and can be regulated to the greatest nicety with hives of all sizes and shapes. I have observed no bad effect, even when (purposely) somewhat overdone.

'Man of Kent' is right in supposing that bees do not propagate the disease readily in the neighbourhood, but quite wrong in supposing that it does not exist in straw skeps. Last autumn I bought five skeps at a distance from home, and placed them near some infected hives. Early this spring I drove them. They were all tainted. At the same time last year I went to see a man who had a great number of hives, all skeps. I pointed out one to him that was unsound. We found it smelt bad and was rotten. I called on him this autumn, and to my surprise he told me that he had not perceived any further mischief. I don't think he deceived me, for he had his usual number looking very strong.—KNOWNOTHING.

YORKSHIRE ASSOCIATION.

[731.] After all I think that Yorkshire is not so devoid of men of 'light.' I am afraid I cannot say, 'and leading,' as some would suppose. I believe we have scattered all over the county a number of bee-keepers, hard-headed men, who, with that cautious characteristic of the county, join not the Association for reasons similar to those expressed by your esteemed and humorous correspondent John Peel. They think it better, and more to their pecuniary interests, to retard any means that may be adopted for the spread of bee-keeping, as during the late unsatisfactory season honey has been very cheap and almost unsaleable in some districts. Others there are who do not join because of the inanition at head-quarters. Members of the Association that I have spoken to are quite dissatisfied. 'You pay your subscription, but for what purpose? There is nothing done.' This year a show of honey and hives was held at Harrogate, in conjunction with the Horticultural Society's show, with a result very unsatisfactory both to exhibitors and to the latter Society. I cannot say who was responsible in appointing the judges on this occasion, whether the Secretary or the Show Committee, but no wonder at so many complaints about judging if it be done in other counties as here. You have had so much correspondence on this subject lately that I will not enter into particulars, but will gladly state my case if the Secretary desire it. Another great hindrance is the size of the county. It hardly seems reasonable to expect the Secretary to pay such attention to members at a distance as he has evidently so willingly given to your correspondent 713. The county is too large to work by one Association or one secretary unless it be divided into a number of branches. Cannot something be done in this direction? Will the Secretary kindly let us know in your next what his idea may be? Then perhaps something may be done to dispel the darkness and gloom, and we may yet hope to rejoice with our favourites in the brightness of a July noon, and find ourselves, to use a Yorkshirism, 'in clover.'—BLACK BEE.

INVERTED FRAMES AND SKEPS.

[732.] Under the head of 'Useful Hints' the writer asks for information upon the above subject. The following is my experience. Early in March I bought of a cottager six very large skeps well filled with English bees and honey, four of them I transferred to bar-frame hives, one of them reversible frames, which were inverted when filled with honey at top, and plenty of brood, putting on a crate of sections. On May 5th one skep was reversed and a crate of sections put on. The results I give below:

No. 1	bar-frame hive,	21 lbs.	
„ 2	„ „	15½ lbs.	Lost queen in May.
„ 3	„ „	40½ lbs.	
„ 4	Reversible frame	15½ lbs.	
„ 5	Skep inverted ...	7 lbs.	

In September Nos. 1, 2, and 3, had an abundance of stores —No. 5 scarcely enough to carry them to March. No. 4 I was obliged to feed for the winter. The above are standing in a good garden well into the country; Ligurian and hybrids in the same place gave better returns. From one I took 83 lbs, leaving plenty of food for winter. During the first fifteen days of September the Ligurians and hybrids were busy gathering very good honey; I think the best of the season they averaged from 11 lbs. to 34 lbs. per hive in that time, while the English did not give a single pound.—L. WREN, *Lowestoft.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

L. KING.—We have so recently given instructions respecting 'Bumping,' and there have been so many letters in the *Journal* in reference to it, that we must request you to refer to previous numbers.

C.—*Candy Cake.*—We cannot reply to your question with better effect than by reprinting the instructions in *Modern Bee-keeping*, p. 72:—'Into a saucepan or stewpan over the fire put a very small quantity of water (½ pint to 4 lbs. of sugar), and keep the sugar constantly stirred, or it will burn. As soon as all the sugar is dissolved, let a drop or

two fall on a plate. If this sets in a few seconds, so that the surface does not stick to the finger when it is pressed, it will do; if, however, it is sticky, it contains too much water, and either more sugar must be melted in it or boiling must be continued, to drive off the excess of water. The right condition being reached, remove it from the fire and continue to stir it very briskly, until it is evidently setting, when pour it into any convenient mould. The barley-sugar so made, correctly named *candy*, will not be bright and clear like that of the confectioner, but it will be far better for the bees.'

W. H. C.—We purpose sending to Mr. Hehner the sample of Californian honey as received, and request him to furnish us with an analysis of it.

I. L. F.—*The Carr-Stewarton Hive.*—This hive was strongly advocated by Mr. C. W. Smith, of Totteridge, Herts. It may consist of one, two, or three stock boxes and a honey box. The stock boxes are 15 inches square, and 6 inches in depth. The honey box, 4 inches deep. Each stock box is furnished with nine moveable, slightly wedge-shaped bar-frames, $12\frac{5}{8} \times 12\frac{1}{2} \times 4\frac{1}{2}$, windows front and back. The honey box contains seven wide bars for honey-cells, the spaces between the bars being fitted with slides like the octagonal Stewarton. The Carr-Stewarton was constructed to combine the chief points of excellence in the hive of Mr. W. Carr, of Newton Heath, Manchester, with those of the Stewarton as enunciated by 'A Renfrewshire Bee-keeper.'

H. B.—The samples of sugar, Nos. 1, 2, 3, are suitable for dry sugar feeding. Nos. 1 and 3 would serve for syrup, but granulated crystallised sugar is preferable. No. 4 is not so desirable for either purpose as the other samples.

Mr. Cornell's Supers (706).—You say that I made an error in attempting to correct you about the queen-excluder referred to above by the expression, 'thus making the rack reversible.' It is quite true that the queen-excluder is both sides alike, and consequently it is immaterial which side is up, but once on the hive it remains in that position undisturbed during the season. As a rack is usually understood to contain the sections, and is the thing to be reversed, I think I may be excused in not understanding that when you spoke of a *rack* you meant *a queen-excluder*. I was not advocating the use of this crate or of the $1\frac{1}{2}$ sections, but what I wished to make clear was that sections of that width did away with the necessity of a bee-space between the top of the brood frames and the excluder, and that if sections of any other width were used, a bee-space must be left between the frames and the excluder.—John M. Hooker.

Sections and Separators (722).*—I notice your editorial footnote, and can only say I am quite willing to leave it to your readers to judge whether the woodcuts in 722 or those in your previous issue best illustrate the one-piece and the piece sections. An illustration is usually given to make the description of anything more clear, but if it is not correct it fails in its object. It was the wisdom of illustrating with incorrect drawings, and not 'the general intelligence of our readers,' that I called in question.—John M. Hooker.

Bees Poisoned and Galvanized Cylinders (715).—Would Mr. Otto Hehner kindly give his opinion as to whether it is prudent to use galvanized vessels for honey?—J. M. H.

* Through a mistake in the pagination in the MS. of the above article last week some lines were transposed. From the 5th line in col. 1, p. 563, to the word 'sections' in the 11th line, should be placed before the 6th line from the bottom of p. 562, col. 2.

*** *The extent of our report of the Hertfordshire Meeting has obliged us to postpone several communications.*

Business Directory.

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Howard, J. H., Holme, Peterborough.
Meadows, W. P., Syston, Leicester.
Neighbour & Sons, 149 Regent St. & 127 High Holborn.
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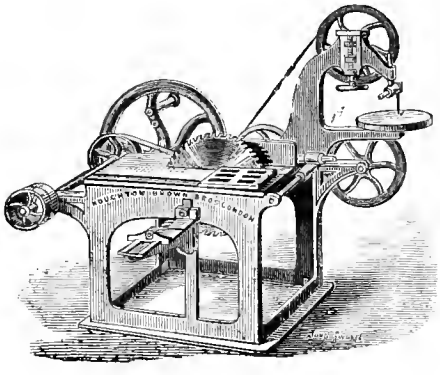

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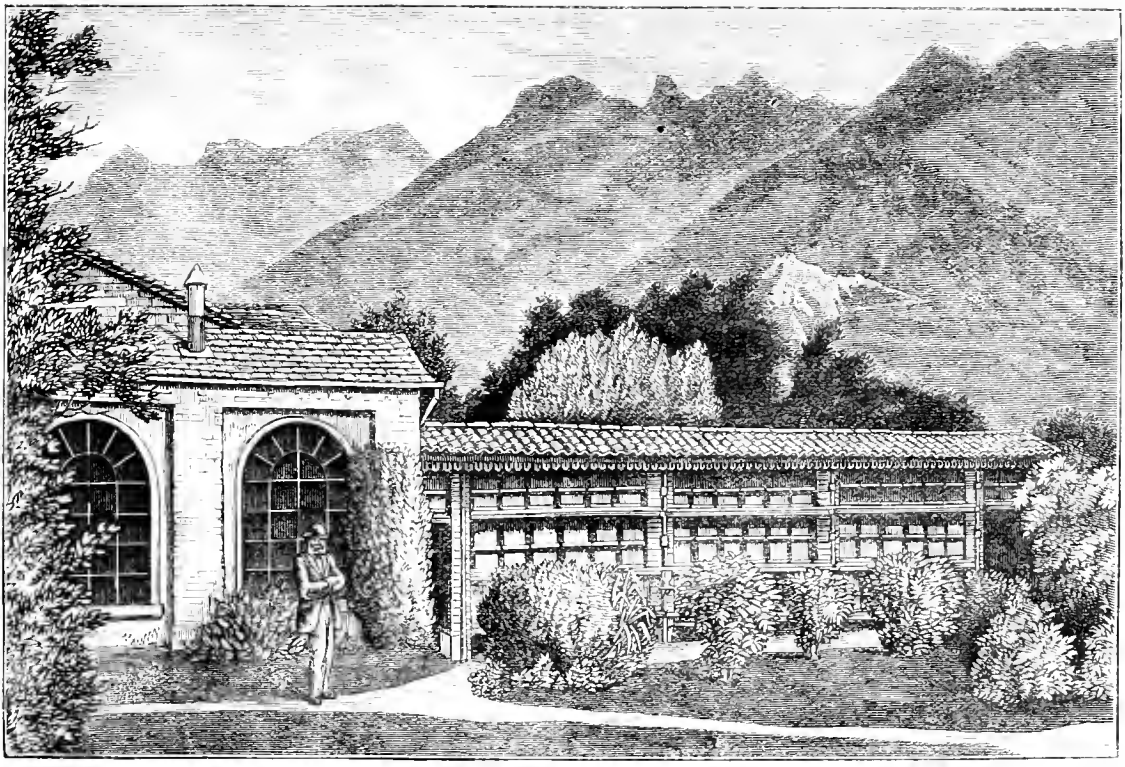
Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.—NOTICE TO COUNTY SECRETARIES.

Notices of Motions for the next Quarterly Meeting to be held on Wednesday, January 19th, must reach the Secretary on or before Wednesday next, 22nd inst.

AN ITALIAN APIARY.

We have much pleasure in giving our readers an illustration of an Italian apiary which we have visited on two occasions.



One evening while enjoying the lovely scenery and balmy air at Ballaigues, a quiet spot among the Jura mountains, we received an invitation to go to Italy and stay with Dr. Bianchetti at Ornavasso, with an intimation that if we decided to accept it our friend M. E. Bertrand would accompany us. Without hesitation we accepted the invitation and soon after on a lovely day we started for our trip. A railway journey of five hours along the Rhone Valley brought us to Brigue, where we slept; and the next day started in an open carriage over the Simplon Pass. This Pass is one of the finest, if not the finest, of any in Switzerland. The road twenty-five feet wide was constructed by Napoleon immediately after the battle of Marengo, and was commenced in 1800, whilst the difficulty of the passage over the Alps by the Great St. Bernard was still fresh in his memory. It took six years to complete, and more than 30,000 men were employed in its construction. It is certainly a marvel of engineering skill, and to give an idea of its colossal nature we have only to mention that the number of bridges, great and small, between Brigue and Sesto, amounts to 611, besides the far more vast and costly constructions, such as terraces of massive masonry, miles in length, ten galleries, either cut out of the solid rock or built of stone, and twenty houses of refuge to shelter travellers and lodge the labourers constantly employed in taking care of and repairing the road.

The ascent begins at Brigue, and the road winds towards the Breithorn, and then approaches by zig-zags the gorge of the Saltine, skirting the verge of the precipice, at the bottom of which rushes the foaming torrent.

At the upper end of the ravine are seen the glaciers under which we shall have to pass, but it takes at least three good hours to reach them. The retrospective view of the Rhône Valley is very fine, and on turning a corner we reach the valley of Ganter, the torrent being crossed by a lofty bridge. This wild ravine is subject to avalanches almost every winter, owing to which the road is frequently impassable. Another zig-zag, and at the end of a three hours' drive, which is a constant pull against the collar from Brigue, we reach Berisal, where we stay for the night. Early the next morning, as we have a long journey before us, we leave this the third refuge and make another start. Along the road we frequently get out of the carriage (for progression on foot is just as rapid up-hill as in a carriage) to examine the floral nooks so familiar to us, for this pass is particularly interesting to the botanist owing to its rich and varied flora. Many a plant have we collected here, which is now embellishing with its beautiful flowers our Alpine rockery in Sussex. But time will not permit us to give much of it to our botanical proclivities, so we push on our way, and in due time reach the first gallery, that of Schalbet, and from here to the summit a picture of desolation presents itself. The pine has no longer the scanty soil necessary for its nourishment, but is replaced by the alpine-rose, growing here in profusion, and the eye wanders over snow and glacier, barren rocks and roaring cataracts, the wonderful road still winding along the edges of the precipice. This portion of the road to the summit is the most dangerous of all at the season when avalanches fall and when tourments arise, and is therefore provided with three galleries, two refuges and a hospice within a distance of one and three-quarter miles. Here our attention is riveted by the glorious view of the Bernese Alps. The glittering white peaks of the Aletsch-horner, Breithorn, and other mountains, are splendid objects, while below them are the glaciers of Aletsch, the most extensive in Switzerland. To our left, and just above our heads, is Monte Leone, below it the gorge of Schalbet, which is filled up with glaciers, and along the edge of a yawning abyss the road is carried. To protect this part of the road three galleries have been constructed called the 'glacier galleries.' We pass into one of these and find the water from the Kaltwasser glacier rushing over our heads. In the spring the avalanches slide over the roof of this gallery. After passing this part of the road we reach the hospice where the good monks of St. Bernard offer food and shelter to travellers. We then begin to descend, pass the Fletschhorn glacier close on our right and soon reach the village of Simplon, where after a little rest for refreshment for man and beast we wend our way along the gallery of Algaby and the banks of the Doveria to the Gorge of Gondo, one of the grandest and most savage in the Alps, which narrows and deepens at every step until its precipices actually overhang the road in many places, which is squeezed in between them on one side and the foaming torrent on the other. A little farther a vast projecting rock juts out from the mountain and seems to bar our progress. But engineering skill has overcome this obstacle by piercing through it. As we come out on the other side the scenery bursting suddenly upon us offers perhaps the grandest assembly of objects to be found in the Alps. Passing the village of Gondo we soon reach the first Italian village of Iselle, and soon after this a change comes over the valley, from nakedness to rich green foliage of the chestnut, which shades the road and to that of the dark pines which clothe the summits of hitherto bare mountains. On reaching Crevola we begin to realise that we are in a different region and in an altered climate. The softer hues of earth and sky, the balmy air, the trellissed vines, the rich maize and millet, the rows of mulberry-trees, the white villages with their tall square bell-towers, also white, not only scattered along the valley but perched on every jutting platform on the hill-sides, all remind us that we are in Italy. The valley now widens, and after a long drive through Domo d'Ossola and Vogogna we at last come to the end of our journey, having driven since seven o'clock in the morning. We hope our readers will forgive us if we have wearied them with our description of this pass, but it is a favourite one of ours. We recommend those wishing to see it at its best to go to Italy over the Simplon from Switzerland, as the impressions left are much more vivid than if the pass is done in the inverse direction.

It was nearly nine o'clock before we reached Ornavasso, where we were met and welcomed by Dr. Bianchetti and his amiable family. Ornavasso is situated on the River Tosa and is only a few miles from Lago Maggiore. The characteristics of the scenery are thoroughly Italian, and it is difficult to realise that only a few hours' journey should so completely change not only the scenery but also the climate on the south side of the Alps. The valley of the Tosa is broad and fertile, and the mountains on either side tower to a considerable height. On the opposite side, and seen just above the bee-house in the illustration, are the quarries which belong to the chapter of the cathedral of Milan. It is from these quarries that all the marble used in the cathedral is obtained, and it is not used for any other purpose. Dr. Bianchetti is one of the leading bee-keepers in Italy and was one of the first to adopt hives with moveable crown-boards, being convinced of their advantages over those of the German type adopted by the 'Associazione centrale d'incorraggiamento per l'Apicoltura in Italia.' He has used this hive for upwards of fifteen years and published in 1874 'Arnia economica a favo mobile,' in which he gave a description of its construction. The hive is oblong and has twelve frames ten inches by eight inches, parallel to the entrance. The floor-board as well as the crown-board is moveable, and this last has a hole in the top about five inches square, fitted with a block to close it. The frames have triangular pieces of zinc to keep them the proper distance apart, and there are no projecting ends to the top bar, the frame being suspended on the rabbets by means of wire pins. The second hive is a counterpart of the stock hive, called a 'melario,' and is used as a super. The entrance is very nearly the whole width of the front of the hive and is provided with a very simple and ingenious contrivance by which the size of the opening can be regulated to the requirements of the colony.

It is a parallel strip of wood 1 foot long 1⅝ inches wide, and ¼ inch thick, with notches sawn in it at intervals. Two hooks are driven in the front of the hive, and when the full opening is required, the piece of wood is slipped over the hooks in the slits A A. When drones are to be excluded the slits C C are used; and if it is wished to close the entrance entirely, the slits B B are brought into use. This brings the guard down to the floor-board, air being admitted through the smaller slits all along the front, as seen in the illustration. Should there be any robbing going

ENTRANCE GUARD.

on, the guard is turned over, and the slits D D made use of. There will then be only two openings at E E through which one bee at a time can pass.

The bee-house in the illustration contains fifty-four hives, such as we have described, placed on shelves, and there is a path at the back from which they can be manipulated. The whole is covered over with a tiled roof. In front of each shelf is an alighting platform made of

straw, so that the bees have always a dry and warm landing stage. The hives can all be worked on the storifying principle, as Dr. Bianchetti works principally for extracted honey. Next to the bee-house, with our host standing in front of it, is situated a well-furnished workshop, in which he makes his hives and appliances, and here we were shown a number of obsolete hives. Among them were the Giotto, also Donati's 'Arnia pyramidale,' which was exhibited at Milan in December 1872, and which, in its construction, reminded us of Mr. Blow's Anglo-Cyprian hive. These had been consigned to the museum as relics of antiquity. We also saw an ingenious appliance for making frames to one guage, and also for making the triangular distance pieces of metal which Dr. Bianchetti uses. Hidden from view among the shrubs and magnificent magnolias, camellias, oleanders, gigantic bamboos, and fine trees, only to be found growing in such a temperate climate, is another bee-house containing thirty colonies. These are in hives of the German type, with doors opening at the back. There are also dotted about the grounds various types of hives, such as the Dzierzon, Fumagalli, Dadant, and others; also observatory and queen-rearing hives. The apiary is a pattern for neatness, and Dr. Bianchetti is a most methodical and careful observer. On each hive is placed a card, giving the whole life-history of the colony, and at every examination notes are made. All the observations are then carefully entered in a diary kept for the purpose. Dr. Bianchetti is an enthusiastic bee-keeper, but unfortunately the district in which he lives is not a good one. Although pasturage abounds, he says that his principal honey is obtained from chestnut bloom, and later in the season from heather. The honey season is very short, and after trying several plans he has been obliged to pursue a special system of management adapted to the district. It is a modification of the Vignole system, a description of which he published in 1877, under the title of 'Sciamatura artificiale e progressiva del Signor Vignole.' M. Bertrand and we had the opportunity of testifying to the fact, that the displaced hives contained the most honey. His theory is that the hives swarmed artificially produce more than those swarming naturally, and the transposed hives yield more than those left on their own stands.

Dr. Bianchetti is also a careful experimenter, and puts to the test all new theories. Amongst other things that we saw was a colony having only drone-comb, yet, notwithstanding this, the queen laid worker eggs, and at the time we inspected the hive there were no drones present. Nor could we notice any great difference in the size of the bees. We were told that when the swarm was first placed on the combs, the queen was for some time reluctant to lay, but at last gave in to the inevitable. Many hives were examined, and we had ample opportunities of comparing the advantages of hives with moveable tops over those opening at the sides. Many were the pleasant chats we had and comparing of ideas, and we shall always look back upon this visit to Ornavasso as time profitably spent. We started in company with M. Bertrand and Dr. Bianchetti for Milan to attend the conference there, deeply regretting to leave Ornavasso and its hospitable entertainer promising to pay a second visit the following spring.

(To be continued.)

USEFUL HINTS.

Eheu! fugaces labuntur anni. Before our next Hints appear the shortest day will have passed, days will be lengthening, light and sunlight increasing, and the queens of our hives will soon be waking up to the joys of maternity. Here, then, is a hint to the fraternity of apiarists that summer is surely approaching. Christmas over, 'things look up,' also bees and *apiarists*. We do not like the old term, '*apiarians*;' the former, no doubt, is American—*pace* 'Renfrewshire'—but the latter is an adjective which we have no right to use as a substantive, and it is allowable in the 'arts and sciences' to coin technical terms, or words, *ergo*, in future, let us not be ashamed of the term 'apiarist.' Some learned friends have suggested '*apist*,' but it smacks too much of the 'evolution theory,' and might be mistaken as referring to the supposed descent of the human race from gorilla tribes!—'Things will be looking up,' and we shall be 'looking up' our hives, building new ones, introducing new principles, furbishing up old ones, and giving them a new face, &c., and the caterers in appliances will be urging us 'to give our orders early.' How important, then, to decide upon the hive we are going to use, the size and style of frame—standard? reversible? close-ended, or Giotto?—hive Heddon? hive Stewarton? Carr-Stewarton? Combination? &c. Plenty of choice. 'Rather too much!' we seem to hear some bewildered novice exclaim. *Reversible hives*, or *Invertible* (coining again!) which? '*Reverse*' means to change the position. A frame, or a hive, is reversed by turning back to front, or *vice versâ*. *Invert* means to turn upside down—*i.e.*, *topsyturvy* (for 'topsi' to'er way,' a corruption of 'top-side the other way,' according to Wedgwood)—therefore, an invertible frame, or hive, is one that admits of being turned upside down. *Q. E. D.* Let us then discourse on

Invertible Hives. The British advocates of these seem rather slow at coming forward and telling us of their successes or failures. We are obliged to Mr. Wren for his report, which is not very encouraging. Meanwhile, we have certain indications from 'Brother Jonathan.' At the annual meeting of the Western B.K.A., held in Kansas City, on October 27th and 28th last, the subject was discussed as follows:—(1.) *J. Couser* said: 'Reversing *sections* is advisable, in order to get the combs built out full to the wood all around; and reversing *brood combs* to get the honey moved to the section-boxes; but it must be done at the *right time*, and properly, or it is bad practice.' (2.) *Mr. Leakey* had tried reversing the lower storeys of hives, and found it a *bad practice*, as those let alone did very much better. His neighbour has also tried it and found it *unprofitable*. (3.) President Hayhurst reported that Mr. Hill thought it was *of no use* except to get combs built out to the bottom bars, which is not needed if any one will properly use *wired* frames *filled* with foundation, when the combs will be completed to the wood all round, not even leaving a hole, and every comb as straight as a board; and, what is best of all, the cells will be all worker size, so that but few drones are reared, and in some hives none are reared. (4.) Mr. Lane thought it valuable only to get the combs in sections built well to the wood, which is much easier and quicker done by crowding the bees properly.

A vote was then taken, which resulted in a resolution being carried *unanimously*, that 'It is *not practical* to reverse hives, frames, &c.'

Is this the beginning of the end, and is inversion, like so many other ideas, to be placed in the category of 'fads' and 'crazes?'

Mr. C. N. Abbott, in a leader in vol. iv., p. 102, of the *B.B.J.*, speaks of 'The insane assertions made by a positivist, named Heddon, at the Michigan Bee-keepers' Association, in December, 1875, denouncing bee-keeping as a *snare and delusion*, kept up by the editors of bee journals and hive and bee-furniture makers, for their own special profit!' Can this be the inventor of the modern 'Heddon Reversible Hive' which is on the point of revolutionising modern 'apiculture?'

The Carr-Stewarton Hive was one which took our fancy in bygone days, and we well remember a fine specimen, exhibited by James Lee, in class 3 (at the Alexandra Palace show, held in September, 1876,) 'for

the best hive for use on the storifying principle,' and which took first prize against ten competitors. Cannot Mr. Lee—whose name we were pleased to see again in our columns after a long interval—give us another specimen, modernised and improved, by the light of the last decade of apiculture? If on the 'Invertible system' we hope he will eschew the odious close-ended frames. If inversion is to be patronised, the brood boxes should be invertible, as well as each separate frame. We believe that failure will invariably follow inversion, if the inversion be practised at any other time than the breeding season. We all know that it is the nature of the bee to place the honey and pollen above, and on the sides of the brood-nest, at times when breeding is being carried on vigorously. During such times, therefore, if the whole nest be inverted, the honey and pollen are, by the bees, found to be in the wrong place, and in order to re-arrange these, according to their own ideas or instinct, they will remove both; and yet, *not invariably*, since we find that bees will often store as well in nadirs—*i.e.* below the brood—as in supers; and the question arises whether they will not often prefer, if space admits, to change the position of the *brood nest*, to removing the honey and pollen, converting the old nest, as the brood hatches, into a storehouse of honey and pollen?

It may be argued that the use of excluder zinc will obviate this objection, but to our mind the impediment thus presented to workers, in a plentiful honey flow, the confinement, more or less, of drones, and the occasional passage of the zinc by queens,—to say nothing of the annoyance to workers by scraping from their legs the loads of pollen, and the loss of many bees in the supers from the inability to find their way out—render the use of zinc very undesirable, and the general adoption of it beyond the Atlantic has always been a puzzle to us.

The Standard Frame.—The suggestion of Mr. Trevor Saynor, in the last issue, respecting a standard No. 2 of 14″ × 12″, is worthy of consideration. If a second standard be deemed advisable it would seem a point of importance that it should be capable of being worked, in one shape or another with the present frame and hive. A friend of great experience writes to us:—'In respect to the standard frame, there is a great advantage in increasing the surface of the hive and diminishing the depth, since it forces the bees to go up into the supers. The deep German hives have not proved a success as far as honey is concerned, and the wintering difficulty should be *nil* with English apiarists. There is something to be said for Mr. Simmins' frame, as present hives, with an extra bottom piece, or "lift," would do, and these might also be utilised as supers for sections, but I do not think it would be as good as a larger frame. With our present frame we can storify much better than we could with any other, even the Heddon, and I am quite sure that in a competition the present frame would return quite as much honey. A deeper and longer frame has advantages, in that it can be much more rapidly built up in spring. It must, however, be borne in mind that an enormous number of the present standard frames are in use, and by introducing another size we go back to the difficulties of having different sized frames which are not interchangeable in an apiary.' These are weighty words, and in the absence of any generally expressed desire for a change in the present standard, or for a second standard of larger dimensions, the wisdom of a move in this direction seems doubtful. Vested interests, in this as in all other matters, stand first consideration, but we must confess to a certain longing for a larger frame which might be worked in connexion with the present one. Indeed, we see no reason why such a frame should not be introduced by private enterprise, and make its own way, without the authority of '*Imperial Sanction*.'

The question concerns purveyors of appliances more, perhaps, than any other class, and we should much like to see the opinions of these—especially of the more prominent and old-established firms—stated in our columns.

The subject of Drones and their procreative power is one of considerable interest to queen-breeders, and has received much notice of late in transatlantic circles.

Mr. Swinson has laid down the 'law' that drones produced as follows (*a*) by a queen which has never mated, (*b*) by an aged queen which has lost her fertility, (*c*) by a fertile worker, are incapable of procreation. Our experiments in this direction have gone very far towards proving the contrary, and we have on our side Dr. Dzierzon, Professor Cook, Dr. Miller, Messrs. Heddon, Pond, &c. What say our English breeders?

Thus far have we been drawn out of our usual course, discursively, on topics of general interest, but the fact that, at this midwinter season, bees require so little attention must plead our excuse, and we beg to refer inquirers to former utterances, which may be found in abundance in back numbers and volumes of the *Journal*, under 'Work for the Month' and 'Useful Hints,' on almost every conceivable method of management. To those who keep and bind their *Journals*, an unceasing fund of information is ever present: and this reminds us that the subject of discontinuing the circulation of the *Journal* amongst its members has been mooted by one of our county associations on the score of expense, and that the money might be better employed in supplying more experts' visits to its members. Considering ourselves in the light of beginners, and inexperienced, we should expect to get more information from the *Journal* than from two short visits per annum of the ablest expert that ever existed, however useful, in their way, these visits may prove.

To take away the *Journal* would be something 'like taking away the sun from the world,' or, at all events, from bee-keepers and bees! No, let us stick to our colours, and if the *Journal* is not good enough, let us all try to make it better; and let our motto be 'fairness, justice, and civility towards readers, opponents, contributors, and all men.' By such means its circulation may soon be increased to such an extent that our Editor and managers may see their way, very soon, to an issue at half its present price—a consummation to be earnestly desired in the best interests of apiculture.

Dysentery, as we are advised, already prevails in some apiaries. It is a disease which exists at no other time than the winter and early spring months, and its chief causes are unwholesome food, cold hives, dampness, too much or too little ventilation, allowing the bees too much space, and long confinement; all of which, except the last, may easily be prevented, and in this case, of all others, prevention is easier than cure. When once the disease is established, at this early period there is little chance of a cure. The only remedy is a change of hive, and a supply of wholesome food, both of which are best accomplished in a warm room. The frames (with bees upon them) should be scraped clean, placed in a dry and clean hive, and a frame or two of fresh sealed honey given at the sides of the cluster. The hive should then be covered with warm, dry porous quilts, and returned to its accustomed stand. *Entrances* must be kept clear of dead bees, wax refuse, snow, and anything, in fact, which causes obstruction, or prevents exit for flight.

ASSOCIATIONS.

GRANTHAM HONEY FAIR.

This honey fair was held in connexion with the Lincolnshire Bee-keepers' Association in the Westgate Hall, Grantham, on Saturday, November 27th. There was a splendid supply of honey, no less than 2680 lbs. being on exhibition. The opening ceremony was performed by the Mayor of Grantham, S. Bentley-

Rudd, Esq. There were less exhibits than last year of extracted honey, but a much better supply of comb honey and wax, and it is satisfactory to learn there were about the same number of vendors. The fair on Saturday presented a good appearance of honey in convenient lots, which met with a ready sale all round. A greater clearance was effected than at any previous fair. The quality of both comb and extracted honey was excellent; comb honey sold readily, at an average of 1*s.* per pound: sections extracted, in 1-lb. jars, averaged from 9*d.* to 10*d.*, choice lots found buyers at 1*s.*; whilst those in bulk might be bought at 8*d.*

There was a good supply of wax, which was in good demand at 2*s.* per pound, much of which was produced in neat little packets. Amongst those members who had the largest quantities on sale may be mentioned Mr. J. H. Brown, of Swineshead Fen House; Mr. J. R. Truss, Bainton Heath, Stamford; Mr. James Gilbert, Stamford; Mr. F. Rippon, Crowland Farm, Ancaster; and Mr. R. Thorpe, Swinestead. Mr. G. Caparn, Newton, exhibited a grand super, weighing over 80 lbs., and which proved a great centre of attraction. Mr. Upton had a nice collection of glass supers on sale, but though pretty and attractive, there was not such a ready sale for them as the smaller sections. Mr. N. Preston, New Somerby, staged the largest quantity of sections, for which he had a fair sale. Only one lot of heather honey in the comb was staged, that by Mr. H. Yates, which was sold at 2*s.* per pound.

The silver medal, the bronze medal, and the certificate presented by the British Association, were awarded to the following exhibitors:—For the best twelve 1-lb. sections of comb honey, silver medal to Mr. Preston, Dudley Road, New Somerby; for the best twelve 1-lb. jars of extracted honey, bronze medal to Mr. C. Lynn, Church Farm, Stroxton; for the best beeswax, certificate to Mrs. L. Brown, Whaplode. The judging was done by Dr. Eaton, Grantham.

The Hall was profusely decorated with flags and banners, and the admirable staging, under the direction of Mr. J. Bolton, was all that could be desired. Choice shrubs and plants, kindly lent by Charles Sharpe, Esq., added much to the appearance of the many stalls. The Hon. Sec., Mr. Godfrey, with Mr. Alsop, Mr. Ashwell, Mr. Barnes, and other members, did their utmost to make the show a thorough success, and we congratulate them upon accomplishing their object.

IRISH BEE-KEEPERS' ASSOCIATION.

A conversational meeting was held at 35 Trinity College, by Dr. Traill's invitation, on Friday, November 19th. After tea the chair taken at 8.30 p.m. by A. Traill, Esq., LL.D., F.T.C.D., when the members present were Miss Violet Knight, Messrs. S. K. Twigg, Rickard, E. Lloyd, Charles Smyth, J. S. B. Vanston, J. M. Gillies, Robert Sproule, Henry Chenevix, J.P., Dr. Knight, Professor Goodman, and Walter J. Stanford, hon. sec.

The minutes of the last conversazione were read and confirmed.

The Hon. Sec. reported that Mr. Wm. Boxwell of Patrickswell, Co. Limerick, had, by special request, forwarded a paper on the relative merits of the 2″ and 1¾″ sections, but was unable to attend himself. Mr. Stanford was requested to read the paper.

Mr. Boxwell began by saying that the section which had hitherto been the favourite with bee-keepers was the 4¼″ × 4¼″ × 2″, but that it had now reached the zenith of its favour, and would probably soon give place to a section vastly inferior in every respect save appearance. Britannia had taxed all her resources at the Indian and Colonial Exhibition to produce a display of honey that would defy competition, but the Canadians coming after her with a larger supply but less display and decoration had driven her quite out of the field. Why was England so beaten? Her sections were of a better size, quality, weight, and intrinsic worth, while the Canadian sections, far under the usual weight, with a large proportion of wax, and inferior in flavour, were able to bring prices we could not touch for a superior article. The reason is simple. The Canadians know the public care but little for, and know nothing of, nice points, and would pay for neither wood for ornaments, and therefore as little of the former as possible, and none of the latter, was to be seen. It is now the Canadians' proud boast that they have introduced honey where it formerly was not known, and created a demand where none had previously existed. We want, therefore, a section, combining the superior appearance of the Canadian with the sterling qualities of the British section, and such a one is to be found in the 4¼″ × 1½″ × 1¾″ section, used without separators. Mr. Simmins states that they hold a pound of honey more frequently than the 2″ width, and he (Mr. Boxwell) had found them sometimes weighing up to 18 ounces. They are equal to the Canadian in appearance, and when open at the sides, similar to the top and bottom, look exactly the same. Another question must, however, be asked about them, and that is, Do they give more trouble? Mr. Simmins says they do, because, 'when a full section is taken off the hive, the remainder must be moved up, keeping those drawn out to the same extent opposite each other.' But this difficulty can be obviated by using racks of eight sections each, and manipulating only racks. Again, can they be glazed? As a rule they cannot, but the little cardboard boxes answer all purposes of glazing when absolutely necessary, as for exhibition, or to preserve them from dust in a shop. Sections were never meant for keeping, but to be consumed while fresh, so that, as a general rule, glazing at all is unnecessary, and does not enter into the question. They travel unglazed quite as well as glazed, if properly packed. The superiority again of this section over the narrower Canadian size is manifest, if only because with anything narrower than 1¾″ excluder zinc must be used, and most bee-keepers are now of the opinion that it interferes with the work of the bees very much, while with the 1¾″ section the queen can be kept down by placing drawn-out sections over the frames and in the centre of the hive.

On the discussion that followed,

Mr. Twigg said it was a great argument in favour of the smaller sections if one could be certain that they would weigh one pound, as the 2″ sections seldom did.

Mr. Sproule could not see how a smaller section, even without dividers, could be made to weigh more than a larger one.

Mr. Gillies said it was quite a mistake to imagine that sections were not meant to be kept. He had still some sections in splendid condition from the 1884 season.

Mr. Chenevix asked whether it was a fact that the public did not care for appearance?

Mr. Stanford said his experience this year with the Honey Market had led him decidedly to the conclusion that not only the public but also grocers much preferred a glazed to an unglazed section, and were willing to give 1*s.* 6*d.* a-dozen extra for them; and as glazing can be done for 3*s.* 4*d.* per 100, that price paid the producer well.

Mr. Gillies asked what Mr. Boxwell meant by saying that the Canadians used but very 'little wood' in their sections?

Mr. Sproule believed that the Canadian section was only 1½″ wide, and that this one was a compromise between the 2″ and the 1½″.

Mr. Sproule handed round for inspection a bottle containing a substance mentioned in Mr. Cheshire's new book for rubbing on the hands to prevent the bees stinging while manipulating. He said he had used it while working with a most vicious stock with great

success. Mr. Cheshire called it methyl salieylate, but he (Mr. Sproule) had been unable to obtain it under that name, but that 'oil of winter green' was what it was sold as in Dublin. It was undoubtedly an invaluable discovery.

Mr. Stanford exhibited a 'Hole's dummy syrup feeder,' which he had seen first at the Indian and Colonial, selling at 1s. each. He said it was the nicest, cheapest, and most successful feeder he had ever used. It obviated the necessity of cutting holes in quilts, and avoided all risk of having bees chilled while feeding. It could be fitted to any existing dummy, and could be filled and handled without disturbing the bees. He also exhibited a fine section and a one-pound bottle of extracted clover honey to illustrate neatness in preparing for market.

The members then joined in general conversation, and the proceedings terminated with a vote of thanks to Dr. Traill at 11 p.m.

A Committee meeting was held at 35 Trinity College on Tuesday, Dec. 7th. The Rev. P. Kavanagh in the chair. Present: Drs. Traill, Knight, Messrs. J. K. Millner, M. H. Read, and Walter J. Stanford. Hon. Sec. The minutes of the last meeting were read and signed. The usual and other business having been disposed of, and cheques signed to close accounts for 1886, the Secretary moved, on behalf of Mr. Duffin, 'That the Association take steps to be represented in the Irish section of the coming Manchester exhibition.' After some discussion it was decided to refer the matter to the annual meeting in February, the Secretary, meanwhile, to get more information on the subject. It was decided not to hold a bee-show in connection with the Royal Dublin Society's spring show, but, if possible, to hold an independent show in the summer. The Secretary was requested to prepare the report for 1886, and lay it, with a full statement of accounts, before the next Committee meeting.

FRANCE.

With this month's number, the *Apiculteur* of Paris completes the thirtieth year of its existence. In summarising the principal apicultural events of the year which is now drawing to a close, it says, 'The bee movement in our country has continued its onward march during 1886. Several groups of bee-keepers have been formed which eventually will be sure to develope themselves into Bee Associations of no small importance. Yet, on the whole, the actual number of stocks has diminished among the cottagers classes of certain districts, owing, doubtless, to the reduction of profits resulting from the cheapening of bee-produce. However, on the other hand, a certain number of independent gentlemen, the clergy, schoolmasters, and other rural functionaries, have entered the field. By devoting some of their spare time to bee-keeping, these new comers will derive,' the *Apiculteur* adds, 'amusement combined with profits.'

According to the same contemporary, the lessons to be given in the course of the coming year, will include instruction in the art of distilling honey beverages; for which purpose the services of a friend, able to explain what utensils are required and how to use them, have been secured.

Irish Evictions and Bees.—The *Pall Mall Gazette*, in narrating the attack on Saunders' Fort, on the Clanricarde estate, by the sheriff and his men, informs us that when the garrison were summoned to surrender they 'saluted the emergency men with a shower of boiling water. The siege continued for some hours. The defenders had some novel auxiliaries. They had taken some hives of bees into the house, and where the emergency men were thickest they flung a hive into their midst. The angry insects were no slight addition to the inconveniences of the assailants.'

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements)*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

BEE-KEEPING AMONG THE SWISS PEASANTRY.

[733.] It is well known that Switzerland, notwithstanding its small territorial extent, possesses a great variety of climate, from that of Italy to the colder one of Spitzbergen, as well as very different languages and races, which results in a diversity of ideas, and fits them for various pursuits.

We will only now refer to French Switzerland, leaving out those parts of the borders of lakes Geneva and Neuchatel where the vine is cultivated; a valuable plant, no doubt, but which offers nothing to bees, and the careful culture of which does not tolerate the presence of any other plant. Above and at the sides of the vineyards stretches the much more extensive region of fields and meadows interspersed with oak, pine and beech woods. Numerous villages, scarcely a mile and a half apart, occupy the slopes of the hills and the hollows of the valleys, half hidden by the fruit trees which surround them, such as pear, apple, plum, cherry, &c., and of which some, notably the walnuts, attain to very large dimensions. Nothing is more beautiful than these trees when in flower. The lime-trees which flower later are only common near the towns. Nothing is seen round the villages but gardens, and meadows in which the cattle will not graze before autumn, and where will appear from April a large variety of flowers, particularly those of the dandelion, which for some days makes a most dazzling carpet. The fields, further off, and smaller in extent, for the property is very much subdivided, will offer later innumerable rose-coloured sprays of esparcette (*Onobrychis sativa*), in which, if the weather be favourable, the bees will find abundance of honey.

Here then appear to be marvellously favourable conditions for the bee-keeper. Yes; if the hives have a population strong enough to profit by this fugitive wealth. Yes; if the *bise* [north wind.—Ed.] does not blow too violently or too cold. Yes; if a night's frost does not in a few moments stop the source of honey. Yes; if rain, which sometimes falls very inopportunely, does not render it all useless. All these *ifs* make you understand it is not to be expected that all years are equally good for bee-keeping. As the Swiss peasant is also generally a proprietor, he has by the side of his house, which comprises, besides his own lodging, a stable for his cattle and a barn to store the produce, a small garden on the side most exposed to the sun. If he has a taste for bees, it is at the end of the garden under a narrow shed that he places his straw hives, arranged on shelves four or five storeys high, fully exposed to the sun. These hives are small, in order to force the bees to store honey all the earlier in the supers which are placed upon them from the 15th of April. The consequence of this is, that if the honey flow is of short duration, the queen having hardly enough breeding space in the hive, this contains scarcely any honey, and has no stores when the caps are removed. It also results in a great many small swarms, whose fate is precarious, because they are left to them-

selves. Hence the proverb: 'One has a large number of bees quickly, and quickly very few.' An intelligent bee-keeper avoids these two extremes, by giving large hives, and food when required: but the peasant, who is too economical, does not willingly give his bees syrup, and, therefore, quite naturally experiences the consequences of his avarice. It must, however, be said in his praise, that he never puts in practice the method of smothering his bees in the autumn to take their honey. [What an advance on some of our cottagers!—Ed.]

Besides the unequal yearly yield, there is the difference in the situation of the districts. By the side of one very favourable district there can exist one that may be very bad. At the end of a narrow and sheltered valley, the flowers make their appearance first on the slopes facing tht south, then in the hollow of the valley, and at last on the slopes, often wooded, facing the north. Under such circumstances the harvest is prolonged, whereas in the neighbouring region or in the plain the bees find everything flowering at once round the apiary, and have but a short time to make their fortunes. In all cases, as soon as the esparcette is mown the honey harvest is at an end, for it is mown when in full bloom, because the hay at this moment is more savoury. The bees can glean a little honey later, but from the 15th June the honey harvest of the year is known. If there is rain during this flowering, or too great heat, the harvest is diminished or is next to nothing, even if the hives are very populous. It is the same if the esparcette has suffered from a too moist winter, and an unfavourable spring. In this case the weakened flower is less intensely coloured, and does not yield honey. Thus it happened this year.

There is, however, a method of doubling the harvest, for those who live at the foot of a mountain. As soon as the mowers have done half their work the supers are removed, and, during the same night, the hives are carefully placed on to a spring cart, and a start made, going at a foot pace, along the zig-zag route that ascends the mountain. Having arrived at the higher pastures, where the vegetation is not so far advanced, the hives, whose colonies are agitated by the journey, are placed in the apiary which is in readiness for them, still during the night, and becoming soon familiar with the spot, where the spring is in full flower, they fly out to profit by the unexpected abundance offered to them. The mountaineer does just the opposite: he takes his hives to the plains in March, or he may even have left them there all the winter. The bee-keepers on the borders of Lago Maggiore profit by the St. Gothard Railway, and take their hives to the more elevated pastures, to insure for them a harvest which lasts from the 1st of April to the middle of August.

With us, who live in the plain, the bees are bad-tempered from the time they can no longer find employment for their activity and energy. The days are long and hot, the dews become slight and rare, and the vegetation in the meadows ceases. Although less than in some other plains, the rain is quickly evaporated, for Switzerland, far away from the ocean, has a climate very much drier and hotter than England. Cherries ripen rapidly, and those left on the trees after the gathering are eagerly sucked by the bees. The time of mowing is coincident with the time of sterility. They, however, find their daily sustenance in the fields which surround the villages, and which have been mown early, and carefully irrigated. White clover is plentiful there, as well as umbelliferous flowers. But the days shorten, the dews reappear, and the evenings in the month of August, often stormy, bring rains, which cause a fresh vegetation to start from the hot ground. There are certainly not a great many flowers, but sometimes the leaves of oaks and the spines of the fir yield a sugary liquid, which produce a very inferior honey and without medicinal value, but this is rare with us.

In September the bees find but few flowers, and suck fruits with avidity: such as pears, apples, plums, grapes, &c., which wasps and hornets had pierced. This is their last resource, and they continue with their well-known perseverance to forage in October. 'Who becomes poor becomes bad,' is a popular proverb which applies to bees. Woe betide weak hives during the hot months and scarcity of provender. For our bees, as for diplomatists, the right of the strongest is the best.

The peasant sells his honey from the month of June in the combs contained in the small straw supers. He only keeps what he may require in case of illness. In November he stops up the hole at the top of the hive, covers it over with old cloths, closes very often too much the entrance, which prevents them flying out freely on favourable days, and getting rid of the dead bees which collect in the hives, and this increases the moisture, and often induces dysentery. In this country if the bees do not winter well, it is generally the fault of the bee-keeper, who has either badly lodged his bees, or who has neglected to provide them with the necessary stores. Thanks to our *Société d'Apiculture de la Suisse Romande*, to special books, and to the *Bulletin d'Apiculture*, edited by M. Bertrand, the peasants, often very intelligent, know how to take care of their hives, and many of them have frame hives very well managed, and the number of these is constantly increasing.

Although the Swiss peasant receives a good primary education, reads a newspaper and various books, he still retains from habit some superstitions with respect to bees. I will mention some:—'It is unlucky to sell a colony;' 'In order that the apiary may prosper, you must begin with either a *stolen* hive or with one that has been received as a present;' 'If the apiary does not prosper you may be sure that the house of the proprietor will not prosper;' 'If the master dies the bees must be told, in gently lifting up the hives.' Lastly, nearly a year ago an honest peasant, well up in arithmetic, came to me and said with an air of triumph: 'Sir, I have satisfied myself this time that the bees sing in the night at twelve o'clock on Christmas eve! My son and I heard them very well. I did not like to believe it, but now I am convinced.'—An Inhabitant of the Country in Switzerland, *Pomy, 27th Nov.*, 1886.

IRISH IDEAS.

[734.] Is honey scarce in Ireland this year or not, is a question which I must still leave to the future to be decided for certain. There have been two or three large consignments of comb-honey sent to the honey market by individuals, of a splendid quality, which have realised high prices, but there it stops, and reports from a few parts of the country give but poor accounts. Why it should be so requires some consideration, because, by examining the meteorological reports, the season seems to have been by no means unpropitious, so far as actual rain goes. For this district a very careful diary of the weather was kept, with the following condensed result, from March 22nd to September 30th inclusive:—

	No. of days on which the bees could work.	No. of days on which they could not work.
March	6	4
April	23	7
May	22	9
June	26	4
July	25	6
August	25	6
September	22	8
Total	149	44

and of these 193 days there were 110 on which no rain fell, 48 partially wet, and 35 wet throughout; on 149 of which the bees were able to work, equivalent to 75 per cent of the season. Why then should the crop be

poor? In this district it is, I think, easily explained. We usually get our large crop from white clover at the very beginning of June, and consequently make up stocks to their strongest for that date. This year, however, the white clover didn't blossom till June 26th. Meanwhile the hives were crammed with bees, and little or nothing for them to do, with only just enough honey coming in from the blossoms to keep them alive. In this state no power on earth could prevent their swarming, and when the honey glut did come they were only just recovering from the effects of it. The white clover lasted only fourteen days, being washed out by heavy rain on July 10th and 11th. How then can we provide against this another year? This was, undoubtedly, the latest season we have ever had, but it might happen again. We must, therefore, either begin to stimulate much later, or to stimulate early and find plenty of work for large stocks to do, till the flow begins; and, as I believe the latter to be the right course, I will try and show how I think it can be done.

First and foremost everything depends on the hive used, which must be so arranged that it has three or four brood nests exactly similar and interchangeable, with a riser and roof to cover all. I use a hive foundation, Baldwin's Royal Dublin Prize Hive, which will do this. It consists of four, and only four, separate parts. (1) The stand and floor-board, (2) the brood-nest, (3) a riser, (4) the roof. If you construct, therefore, three more brood-nests exactly similar, you have (if possible?) the perfection hive in my humble opinion. Having begun then to stimulate at the end of April and got the bees covering twelve combs towards the end of May, you are ready for all emergencies.

If the glut comes at once, the stocks are strong and supering can begin at once. If it does not begin at once, take a second brood-nest, filled with twelve frames of foundation, and put it underneath the other, not above, close the upper entrance, and feed from a back dummy in the real brood-nest. By this means the brood is kept as warm as it was before, and the bees passing through the lower storey will attack the foundation and draw it out. Then add another storey below, and if necessary another, keeping the original brood-nest always at the top. Directly the honey-flow begins, however, return the brood-nest to the bottom again, with the two or three storeys and a rack of sections above it. If the flow continues, a second rack of sections can be added at the end of a week, and the whole left undisturbed till the end of the season, when an extensive yield will be obtained.

I claim no originality for this theory, but were it more generally practised I think the complaints of a bad harvest in such a year as this would have been fewer. The system, however, must be worked with tact and judgment, like everything else, since, as far as I can see, no hard and fast rule can be laid down for bees.—Walter J. Stanford, *Lucan, Co. Dublin.*

THE LAW OF DIRECT INTRODUCTION.

[735.] Stress of time, &c., have prevented me replying to Mr. G. Stothard (No. 651) and 'A Benighted Essex Bee-keeper' (No. 668) ere this.

Mr. Stothard tries to suggest an improvement of my law, but as I claim absolute infallibility in its naked simplicity under all circumstances, I fail to see where adding more conditions can improve it.

I am not aware that Mr. Simmins has either discovered or advocated the plan which Mr. Stothard describes as 'Simmins' direct introduction.' The system known by this name is the *uniting* system of bees, comb, brood, and honey; I am not able to find that Mr. Simmins has described in the *Journal* the plan of giving a starved queen alone at night to normal stocks a few hours after removal of reigning queen; true, the Editor copies an extract from his pamphlet for February 4th, page 45, of the plan, but I do not call this 'advocating it here,' *i.e.*, in the *Journal*, as Mr. Stothard says. Moreover, I maintain he is *not* the discoverer of the plan, as all may see for themselves if they turn to the issue for December 1st, 1884, page 417; there they will see that Mr. J. E. Pond, jun., a noted American authority, was *the first to advocate it here*, and that Mr. Simmins has merely redressed the system and called it his: if his alteration is really an improvement, then it should be called the 'Simmins-Pond' system. Perhaps this may account for the reason that Mr. Simmins preferred to 'advocate' it in his pamphlet, because Mr. Pond would have seen it and recognised it as his.

This system has nothing to do with the 'Law,' and works on quite different principles, though I see some are accrediting success to Mr. Simmins which really belongs to it, *e.g.*, 'Lynton,' No. 652. I think this will also answer 'A Benighted Essex Bee-keeper.'

Mr. A. S. Wilmot (No. 719) 'takes up' 'North Derbyshire,' and says he is 'misleading,' and that though he complied with the 'Law' he also complied with Simmins, and then says they 'are two very distinct things, yet agreeing in some respects.' I do trust that writers, Mr. Wilmot included, write to extract the truth and not to 'catch' or trip up one another. A little investigation would have shown him that in the 'Simmins-Pond' system the fresh queen is to be given the same night of the day the other one was removed on; while 'N. D.' introduced them weeks after.

If we turn to page 359, for August 5th, we there see that Mr. Wilmot successfully introduced two queens in accordance with the 'Law'—all he tried; so it appears he could have added some valuable information had he chosen. Anyhow it does not look well for one that has nothing but successes to record to doubt much. By this Law no queens are starved a moment, and when the stock is in right condition they can be introduced just when convenient, day or night, winter or summer; and to such as myself, who have to keep their bees a quarter of a mile off residence, and go to business three miles in the opposite direction, it is a very important consideration; I can only see them at very irregular times, but by close observation and experiments, I can leave them alone, swarming time included, and do what is necessary to be done *just when convenient*. Quite a number of others here are following my practice who otherwise would be unable to keep bees, but can keep six to twenty stocks without much trouble. For four years I kept them an hour's walk off residence, and walking was the quickest and easiest way to get to them, and all uphill, too. Bees are thus to me a source of pleasure. How many who read this can say their bees need not be attended to, whether anything else is or not?—A Hallamshire Bee-keeper.

THE DOUBLE EXHIBIT AT WOLVERHAMPTON. JUDGING AT SHOWS.

[736.] More than enough of your valuable space has already been taken up with the correspondence respecting the double exhibit of Mr. Elihu Clowes in the class for extracted honey at the Wolverhampton show, but as Mr. Edward Clowes has again brought the matter up in your issue of December 2nd, I should like, once and for all, to have my say, if not trespassing on your good nature too much, particularly as I am the person who was so ill-advised as to receive the double entry. It is a question, however, whether I had any choice in the matter. I confess it never occurred to me that I had, or that there was any impropriety in Mr. Clowes making the entry. There was nothing in the rules to prohibit any exhibitor making half-a-dozen entries in any class if he felt disposed to do so, and taking all the

prizes in the class if he were able. Mr. Clowes was therefore perfectly in order in making the entry he did, and I am bound to say that I do not think I or the Committee had the power to refuse them, even if we had wished. The question, however, never occurred to me until the judging, when the rules were referred to, and there being no provision to the contrary, the judge had no alternative but to divide the first and second prizes between them, as they were undoubtedly superior to anything else in the class, and it was impossible to distinguish the one from the other.

Whether it is advisable to have a rule, as they have at some horticultural shows, to the effect that no exhibitor shall take more than one prize in a class or not is a question which will doubtless receive the careful consideration of the Committee when preparing the schedule for the next show; but even if such a rule should be adopted it would not, I imagine, prevent any exhibitor from making two or more entries in any class should he think fit to do so, though only one of those exhibits could receive a prize. As an exhibitor of poultry I frequently make two entries in the same class, not so much with a view to taking two prizes as from a desire to meet the fancy of the judge with one exhibit or the other. I have now in my possession two cocks which have been on several occasions exhibited together under two of our most experienced judges. One judge has invariably placed No. 1 before No. 2; the other judge has as invariably placed No. 2 before No. 1. Both judges have acted consistently, but their opinions differ. It is the same with honey and everything else, so that even when the British Bee-keepers' Association have put forth a scale of points for the guidance of the judges (which I think is very desirable), Mr. Clowes may still find that he may be first at one show and yet may be beaten at another by the same exhibit which took second or third at the first. There is often so little to choose between two or more exhibits that even the same man may surely be excused for reversing his former decisions; but when we allow for the diversities of opinions, tastes, and fancies, it would be a miracle if decisions did not vary. I do not think there was anything to be surprised at in the exhibit of extracted honey which took first at Gnosall (which, by the way, was *not* the same as that with which Mr. Clowes took second at South Kensington) being beaten at Lichfield six weeks later by the exhibitor who took second at Gnosall. Many changes may take place in honey in six weeks, and the exhibitor in question may have taken an entirely new and superior lot of honey in that time. As one of the judges at Gnosall I may say that there was not very much between them even then—a question of ripeness, if I recollect rightly, decided the matter.—Granville R. Bailey, *Madeley, Staffordshire, Dec. 6th.*

SCOTTISH BEE-KEEPING AND REPORTING.

[737.] Since our old friend, 'A Renfrewshire Bee-keeper,' persists in *rating* Mr. Raitt (no pun intended), 'Amateur Expert,' and myself, and cleverly turns the tables upon me and *my* 'bunkum,' a dread seizes me lest his piercing ken should discover an error in your report of my speech delivered after the luncheon at the Colonial Exhibition on the 6th of October last. I should not have ventured to trouble you, Mr. Editor, but 'Renfrewshire' playfully reproaches me with allowing my 'bunkum' 'to stand unrepudiated for *four* weeks,' and in your kindly-expressed leader on this subject you revert to the old maxim 'Better late than never,' which encourages me, after *ten* long weeks have passed, to ask you to correct the error above alluded to. On page 470 of your issue of October 14th I am represented as saying:—'Thirty-five years ago in Kangaroo Island, which was at the present time devoted to the breeding of Italian bees in their pure state, the Legislature of South Australia prohibited the introduction of any other race of bees in the island. They could boast nothing like that in the old country,' &c., &c. ('bunkum' again). Now I really wonder that such an absurd statement as this should have escaped the keen eyes of 'Renfrewshire,' and I dread to think what his comments thereon might have been. Why, sir, thirty-five years ago the Italian or Ligurian bee was hardly known in Europe as a distinct race or variety, much less had it been introduced at the Antipodes! Please allow me to state what I really did say, viz.:—'Thirty-five years ago, when, on a bright summer's day, sailing past that beautiful island called Kangaroo Island, in South Australia, I had exclaimed "What a magnificent location for an apiary!" I little anticipated its future destiny of becoming the nursery of the finest rece of the honey-bee for propagation throughout the whole of Australasia. But the South Australian Legislature has lately prohibited the introduction of any other race of bees than the Italian into that island, which has thus been devoted to the breeding of that race in all its purity. We can boast nothing like that in the old country. We still continue to import Italian bees, but we make little or no effort to breed the race pure.'

I attach no blame to your reporter, since any man, not thoroughly at home in the subject, when condensing a speech is liable to error, and I had fully intended to let the 'slip' pass, but down upon me comes dear old 'Renfrewshire.' Long may he live, and many a lively satire may he contribute to your columns.—George Raynor.

SINGULAR CONDUCT OF BEES.

[738.] During the past season a neighbour of mine, an old bee-keeper, had a large skep at swarming point, and hanging out for several days, and for convenience he placed an empty one on the stand beside it, but blocked the entrance up. Soon after, observing the bees clustering about the empty one, and thinking if they swarmed they would go into it, he opened the entrance, but they took possession of it without swarming. He also had a 'dandy' on the mother hive which was filled with honey. However, he decided to drive the bees out of both skeps into a bar-frame hive, and requested me to assist him, to which I readily consented. We managed to drive them, but it was a rough job, and the skep intended for the expected swarm was half filled with comb and honey, the other was full of brood in all stages, thus one swarm occupied two skeps with no connexion except by the flight-hole; but what seemed the most singular to me is that on examining the comb we could find no trace whatever of a queen-cell.—Engine-driver.

FIXING FOUNDATION IN SECTIONS.

[739.] As I have never seen the method I adopt for fixing foundation in sections mentioned in the *Journal*, I send a description of it. Place the section on a flat board, and with a straight edge and a sharp knife *cut completely through* that end portion generally called the *bottom*—I make it the *top*—exactly in the centre. The severed halves are then easily forced far enough apart to admit the foundation between them, where it will be nipped so tightly that nothing short of tearing will remove it after the section has been folded in the usual way.—R. J. Sankey, *Christ Church Road, Surbiton.*

'IMPROVED LANGSTROTH FRAME.'

[740.] Perhaps I ought to note that the frame figured in *B.B.J.* for December 9th (724), page 574, *re* 'Canadian Hives,' is identical with that in use by me. A form of this I exhibited at the Metropolitan show of hives held at Knightsbridge.—J. R. W. Hole.

POLLEN-GRAINS IN HONEY.

[741.] Can any of the readers of your *Journal*, who are practical and scientific bee-keepers, and have at any time examined honey with the aid of a microscope, and found grains of pollen floating in the honey that has been gathered by the bees, kindly favour me with a list of the various orders of plants the pollen-grains they found belong, and correspond with me on the subject for study?

I have taken up this subject for study, and have found upon examination that the number of beautifully preserved pollen-grains floating in pure honey is marvellous. So well are they preserved that it is an easy matter to name them, and by that evidence say what plants are frequented and what plants are avoided by the bees. The microscopic appearance belonging to the various honeys is a good subject for study, and one full of interest.—JOHN SMITH, *Member of the Berkshire B. K. A., Member of the Practical Naturalists' Society, Clewer, Windsor, Dec.* 11.

CROAKING NOISE. (203.)

[742.] Since my communication to you of April 26th, this subject has been left untouched in your *Journal*, with the single exception of Mr. Sambels when speaking at the quarterly conference of the Hertford Branch of the Herts Bee-keepers' Association lately held. This croak, rattle, or drum-roll, may not be of much importance except as a 'fact,'—disputable possibly, but still a fact, and if so, claiming the attention of every scientific bee-keeper.

It appears to me to be a distinct call for assistance, or note of warning, upon the part of the queen; being sometimes abrupt and discontinuous as a croak, then again continuous and uninterrupted as a drum-roll. The *timbre* or pitch of note in some queens is higher than in others, but, so far as I have yet ascertained, unvarying in each.—EDWARD C. ANDERSON, *Darlington, Dec.* 11, 1886.

Reviews.

PRAKTISK OCH TEORETISK LÄROBOK I BISKÖTSEL, SAVÄL I RUNDA HALM SOM RAMKUPOR, by Hj. Ställhammar, Gothenburg. Although there have been a great many works on bee-keeping published in the Swedish language, this is the most complete treatise on the subject that has appeared within the last few years. In 1882, the *British Bee-keepers' Guide Book*, translated by the present author, made its appearance: but bee-keeping has made such progress in Sweden, that we are pleased to find that a much larger book has been needed, treating more fully on the natural history of bees. This is gone into carefully, as also is the interesting subject of the relation of bees to flowers. A good deal of space is taken up with a description of straw skeps and straw hives, showing that this style of bee-keeping has still its advocates. The engravings used in the translation of our *Guide Book* have been utilised also in this, and we find besides many additional ones. The author describes the style of hive used by him. It is a modification of Abbott's Combination hive with straw sides in the place of wood. He calls it 'Ställhammar's Kombinationskupa,' and it has, like the other, frames with broad shoulders placed in the hive parallel to the entrance. Both Mr. Abbott's and our hives are minutely described and carefully figured. There is also a chapter devoted to reversing frames, and the theory explained. Alley's system of queen-rearing is also described, and illustrations from his book given. At the end there is a very useful summary of operations for each month in the year. The book contains 182 pages, and as it is compiled by one of the most practical bee-keepers in Sweden, chairman of the Bee Association, and editor of the *Svensk Bi-tidning*, who here gives his experience, it must tend to promote the spread of the industry in that country. We congratulate M. H. Stalhammar on this timely addition to the bee literature of his country.

APTENDICE ALL' OPERA DEL CAV. DOT. ANGELO DUBINI, L'APE E IL SUO GOVERNO. Published by the author, Milan. In 1881, Dr. Dubini published his voluminous work of 688 pages, entitled *L'Ape e il suo governo*, giving all the best information up to that time collected from English, French, German, and other works. Great strides have been made in bee-keeping since then, and as Dr. Dubini keeps himself thoroughly well up in all that goes on in the bee-keeping world, he has found it desirable to add an appendix of sixty-four pages, in size uniform with the former volume, which he publishes under the above title. This appendix consists of notes and extracts on various subjects connected with bees, and a large folded sheet of illustrations, so that it brings the latest discoveries to the notice of the readers. To those already possessing the large work this appendix is indispensable as without having to wade through the mass of journals on bee-keeping, we have these selections, and as they are by a thoroughly practical bee-keeper they will be found to be of considerable assistance.

HONNINGEN OG DENS ANVENDELSE, by Hans Ersley. Published in Kalundborg. This is a pamphlet in the Danish language on the utilisation of honey in food and drink. In addition to a description of the various virtues of honey and its chemical composition, there is given a number of recipes for making cakes, compiled from pamphlets by Newman, Dennler, and others. The manufacture of different descriptions of mead is carefully explained so as to enable those who cannot get rid of their honey to utilise it to the best advantage. There is also a chapter on the adulteration of honey, and an exposure of the so-called Swiss table honey served at hotels; also Dr. Eschmann's Alpine honey made of malt extract, and others, containing no honey at all, which ought to do some good in showing consumers the value of honey as against these health-destroying compounds. M. Ersley is the editor of the *Tidsskrift for Biavl*, and in publishing this pamphlet he has done a good work for both the bee-keepers and the public of Denmark.

Echoes from the Hives.

Swineshead, Lincolnshire.—The bee-keepers in this district complain of the small yield of honey. A few hives that were extra strong did fairly well during the honey flow, but that lasted only about ten days. The Fen House Apiaries, having seventy acres of orchards closely planted with various kinds of fruits, two acres of crocus, and various kinds of flowers, fared no better. But the chief difficulty bee-farmers have in this district is to sell their honey in quantities; men well known going about and selling in small quantities may get rid of their honey. I took only 70 lbs. to the Grantham Honey Fair and had to bring back 23 lbs. thereof. Our large apiarians, Messrs. Brown, Gilbert, and Truss, exhibited larger quantities, but fared no better. The latter exhibited at the County Show at Lincoln, and did not sell sufficient to pay expenses. I think the restrictions there confining the exhibits to 1-lb. and 2-lb. jars a mistake. Induce the public to buy by having fourpenny and sixpenny jars made something like quinine bottles that the chemists have, so as to hold tight a bung, being strong at the top, to be simply wrapped and put in the coat-pocket by purchasers, without fear of leaking; in this way many old customers have come again. When tied with parchment they simply shake their head and say 'No.' I have some friends who wish to sell their bees, and others will not increase their stocks. At Mr. Cooley's (Bicker) sale lately I bought twenty-four hives, twenty-two of which had bees with from five to twelve frames, some of which had a

fair quantity of food, for 4*l.* 0*s.* 6*d.* They were single-walled, Abbott's Irish pattern, made to hold fifteen frames. —R. Thorpe.

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

A. W.—*Swarm deserting.*—Two queens, a young one and the old one, no doubt, came off with the swarm, one or other of which departed with the greater part of the bees, leaving the one you found in the hive with a few attendant bees. This latter had probably been injured in a battle royal, and was unable to fly, otherwise she would also have departed; or it might be that the majority of the bees returned to the parent hive, deserting an aged and worn-out queen, which they often will do at swarming time.

H. C. J. B.—*Crosses of various Races of Bees.*—There are no *collected* published results of experiments in crossing different races, but there are many notices of such in the Apicultural Journals—English, German, Swiss, and American—of the last ten or fifteen years. It may be laid down as a rule, generally correct, that the queen exerts greater influence on the offspring, both as regards appearance and qualities, than the drone; *e.g.* an Italian queen which has mated with a black drone, produces a progeny more distinctly yellow-banded, and of more gentle disposition, than a black queen which has mated with an Italian drone. But of all the crosses, of which we have experience, that produced by an Italian queen, mated with a Cyprian drone, is the best, all points taken into consideration. We can also speak favourably of the Carniolan-black, and the Syrio-Italian crosses. The first cross is generally the best, afterwards there is a tendency to degenerate, as in the case of most other animals. This is a subject on which there is plenty of room for experiment, and we should be glad to see the results of careful trials by experienced apiarists published in tabulated form. The great difficulty of carrying out such experiments, in this country, consists in the want of an isolated position, where drones of other races cannot intrude, and which requires a distance of eight or ten miles to intervene.

J. D. McNally.—We are much obliged for your communications, and would suggest that as you admit our report to be correct you should send your corrections to the Journal in which you say the misstatement occurred. We are glad you have the same good feelings towards Mr. Raitt in Scotland as we have in the south.

M. T.—*Foundation.*—You cannot get it drawn out 'ready for next season's use,' as you say. You must wait until next season arrives, and then, by hiving your swarms on foundation, you can get it rapidly drawn out; or, by giving it in the centre of your stocks, you may prevent or retard swarming. Do not attempt to give it 'early,' or you will seriously check the prosperity of your stocks.

W. J. M.—*Wintering Indoors.*—The Transatlantic plan of wintering bees in 'cellars,' which, according to the description given by our Canadian visitors, are not necessarily under ground, but may be buildings constructed on the principle of ice-houses, with thick walls designed to maintain an equable temperature, is not well adapted to this climate. In Canada the outside temperature remains for months below freezing point, and that in the 'bee-cellars' is kept uniform at about 40°, at which the bees are quiet and have no desire to fly. If you attempted to winter in a darkened room you would find that when the temperature rose, as it frequently does with us, to 50° or 60° the bees would be restless, and being unable to leave their hives in the dark would very likely become dysenteric, It is better to leave them on their own stands, and let them take natural advantage of the warm days when they happen.

Elihu Clowes.—*Wolverhampton Show.*—The subject of the double exhibit at this Show has now occupied a large portion of our space; if the result be a revision of the rules of the Association the letters will not have been written in vain. We have in another part of our impression (p. 586) a letter from the Rev. Granville Bailey, giving a concise history of the origin of this exhibit. This will afford us a favourable opportunity for closing the discussion.

Inquirer.—*Gorse.*—Bees visit this flower, but are not very partial to it; they gather from it pollen of a light brown or dirty yellow colour.

A Request.—Will any secretary of a local bee Association kindly send particulars of working, rules, &c., to R. W. Rayson (Lay-reader), Plymstock, Plymouth?

Saltpetre for Smokers.—Having often been inconvenienced by my smoker going out, I soaked old sacking, &c., in a solution of saltpetre, and now find no trouble. [The effect of this solution is injurious to the bees.—Ed.] Turpentine I find, or fancy I find, is a real cure for the swelling and pain caused by stings.—Richard Binns.

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Editorial, Notices, &c.

CYPRIAN AND CARNIOLAN BEES.

We wish to draw our readers' attention to the remarks of Mr. Benton on these bees in our columns this week. We are very glad to have the opinion of one who has devoted so much time to them, and we think he hits the right nail on the head when he says that 'Cyprians are the bees for the skilled specialist;' but the main point, and one that is of the greatest importance to the bee-keeping fraternity, is, Are they as good for the general bee-keeper? Our own experience with both these races began in 1875, and we shall never forget the stinging we got from the first Cyprians exhibited by Mr. Neighbour at the Crystal Palace that year. Although we kept a hive or two it was not until 1879, when a stir was made about them in this country, that we commenced to cultivate them in earnest, and not until 1882 that we had the largest number of our hives containing Cyprians, which we were determined should have a fair trial. Since that time we have had a great many colonies, both good and bad. Our experience is that Cyprians are good for the expert bee-keeper, and that novices or timid bee-keepers should not meddle with them until they have acquired sufficient skill in manipulating quietly and carefully. We did not succeed with smoke, and it was not until it was given up that we were able to master them. Our highest authority on the subject, and who has carefully studied their character, the Rev. G. Raynor, speaks favourably of them, but he does not omit to mention their bad qualities, and says they are extremely vindictive. We have bred queens every year by careful selection, and have not omitted to select the quietest stocks for breeding drones, but this vindictiveness is very difficult to breed out, and will not be accomplished until means are adopted for a better selection in breeding than those pursued by the generality of our bee-keepers. We have had Cyprians which we could manipulate without smoke or veil suddenly become so fierce, without apparently any provocation, that we have been obliged to close the hive and retreat. On one occasion we were examining a hive which we had marked as particularly quiet, and which we had destined for queen-rearing. It was rather crowded with bees, and we decided to place a couple of frames of brood into another hive on the top of it, and to replace these with two empty combs. Our assistant was told to get a hive for this purpose, and no sooner had he turned to go for it, than the bees rushed out and pursued him, and we at once closed the hive, but not without getting a large number of stings. The bees did not quiet down like other bees do, but followed us even into the house. All the evening they tried to get into the man's cottage, and the next day it was impossible to go anywhere near them without their flying out at us, but as we were determined to give them the extra hive, they severely punished us for our temerity. They quieted down at last, but it is needless to say we did not keep this queen for breeding.

More than three years ago we quoted Mr. Raynor's opinion of these bees in our *Guide Book*, gave instructions how to manipulate them, as well as our own experience, stating that 'Colonies differ very greatly as to temperament,' and our further experience fully confirms this. We are glad to find that Mr. Benton does not disagree with us. We do not, and would not, recommend any one to raise either queens or drones from bad-tempered stocks, and great care should be exercised in introducing fresh blood, or the work of years may be quickly undone. We do not think for honey-getting there can be better bees. They do not wait for the honey harvest to fill their combs with brood, and are always ready, but for all that they are not bees to suit every person. They are bees for the experienced bee-keepers, but all will admit that these will be able to get honey from, and manage, any sort. What we want is a good bee that can be managed by the large number of average bee-keepers, and one that could be placed in the hands of a novice, and not one that is suited only to a few experts. Much will have to be done in selection before such a bee will be produced. We have been making a careful selection in breeding our own Cyprians since 1882, and have destroyed all the queens from the most savage stocks, and although, perhaps, we can see a slight improvement there still remains much to be done before we arrive at perfection. A first cross with either Italian or Carniolan we have found much more quiet.

Our experience with Carniolans dates from 1875, when we purchased several queens from the late Mr. J. Hunter, who imported them, but we had a great deal of trouble with them, owing to their swarming propensities. They would even swarm with supers on, but by giving them plenty of room we were able to control them. However, we found them so far behind Cyprians that for the last five years we have ceased to keep them. It is true they are very quiet, and not often inclined to sting, and for these reasons are most decidedly the best bees for the beginner. That they are able to sting, and pretty severely too, we have had ample opportunities of experiencing. More than three years ago we expressed our opinion respecting both these races; and we still believe, as we then stated, that Carniolans might be improved by crossing with Cyprians, but as a pure race there must be a good deal of selection in breeding before

we reach our standard of excellence. Since we have given them up we have seen and handled a great many Carniolans, and have had our former opinions more strongly confirmed. We are glad to hear that Mr. Benton is going to start a Carniolan queen-raising establishment, and we trust that it may not only be a pecuniary success, but that he will do something, by breeding only from the best-selected queens (even if he charges more for them) to improve upon those we have hitherto had anything to do with. We wish particularly to call our readers' attention to Mr. Benton's remarks on crossing the races, and to ask them to try it for themselves. We have had very few reports of Cyprians, and should be glad to hear what those who have kept them here have to say about them.

AN ITALIAN APIARY.

(*Continued from p. 581.*)

In the spring, after spending some weeks on the Italian lakes, we went to Pallanza, where we spent some days, and had an opportunity of visiting the gardens of Prince Troubetskoi at Intra, who has a splendid collection of eucalyptus trees. Here we saw no less than sixty varieties. One of the trees, nearly fifty feet high, of the variety *Eucalyptus amygdalina*, blooms profusely, and we were told was abundantly visited by bees during the flowering season. We were also struck by the immense number of acacia-trees in full bloom all along the plain from Milan to Arona, and along the banks of Lago Maggiore, their bright colours contrasting with the sombre hues of the olives. Although in some places the smell from these acacia-trees was most overpowering, we were consoled by the knowledge that the bees collected large quantities of honey from them, the excellent quality of which we were able to judge for ourselves, because, unlike the hotels in Switzerland, where glucose instead of honey is served for breakfast, at the hotels in Italy we had an opportunity of tasting genuine honey. Why will visitors not always ask for genuine honey, and insist upon getting it, and thus not only do good to bee-keeping, but also to themselves? If tourists were to 'boycott' all hotels serving glucose, we would guarantee that in twelve months there would be a great reform of this nefarious practice. We are pleased to testify that not in any one of the hotels in Italy did we see anything but genuine honey.

Although it was with much regret that we bade farewell to the lakes and their charming scenery, we looked forward to a pleasure in store for us, and made our way to Ornavasso, which we reached after a drive of about two hours. Our host again welcomed us to his charming Italian villa, and did everything he could to make us feel at home. Several well-known Italian bee-keepers were invited to meet us, Dr. Dubini (whose acquaintance we had already made the previous year at Milan); M. Guazzoni, a most progressive bee-keeper and inventor of a machine for making wax foundation (described on page 167 of *Journal* for this year); M. Fresca, his partner; and Cav. Henrico Bianchetti, our host's son, from Turin, who has devoted himself to science, and is the author of several works.

Dr. Dubini, whose ingenuity is always bringing forth some improvement, had a number of appliances for us to inspect. He is also one of the progressive and leading bee-keepers, and uses a hive with moveable top very similar to that used by Dr. Bianchetti. M. Guazzoni has a large apiary at Golasecca, and has invented what he calls the 'Conciliation' hive, the half of which has a fixed roof, and the other half moveable; but he told us that he was so convinced of the superiority of the moveable-top hive that it had almost entirely replaced the other in his apiary. He has also increased the size of his frame, which, in this respect, is a great improvement upon the Italian standard. In fact we are surprised that much honey can be got with such a small frame, only 10 × 8 inches, and yet a bee-keeper named Tartuferi owns 1000 hives of the old German type, and does a considerable trade in honey. The evening was spent in an animated conversation on bees and in comparison of notes, and it was not until quite late that we separated to go to bed.

Early the next morning we made an inspection of the bees, and found them strong, but many of the colonies were sadly in want of food, which rather surprised us. The weather was fine, but the bees were not able to collect sufficient to keep themselves, and Dr. Bianchetti had to give several hives frames of sealed honey-comb (of which he always has a stock in store) to save them from starvation. These combs, filled with heather honey, are kept stored away in a cupboard prepared for the purpose. Heather honey is considered good enough to feed bees, but is not valued as it is by the Scotch for table purposes, and no trouble is taken to get it. We also assisted in making several swarms on the Vignole system, as in a day or two the chestnuts were about to commence flowering. There were some lime-trees in the neighbourhood, but, singularly enough, although in full bloom, there was not a single bee upon them. We asked Dr. Bianchetti to try a hive just for experiment on the 'doubling' principle, as this was the precise moment for performing the operation, and we have since heard that this hive has yielded the most honey of any in his apiary. Every hive has salt water supplied to it in a little tray made to slip into the hive. The amount taken in a day is astonishing, and Dr. Bianchetti considers it indispensable to the well-being of his colonies. As not much comb foundation is used, it was a favourable opportunity for us to examine the combs and study the transition cells from worker to drone. We examined a large number of combs, and found, as we had generally done before, that the transition is gradual, the alteration being made in from four to six rows, and very seldom in one row, except where pieces of worker and drone comb are placed so close together that the bees cannot do otherwise. We were also able to take a very large number of impressions direct from the combs, showing the most varied forms of naturally made cells. Many of them have acute angles, and also right angles, thoroughly disproving the assertion that it is impossible for bees to make cells with angles less than 100°. We found Langstroth's diagram not so very far wrong after all. All these cells had been used for breeding. We particularly noticed the colour of the bees. The Italian bee-keepers are not so particular about colour as are some of ours; but although there is not one black bee anywhere in the neighbourhood, we noticed many workers with only two bands, and many of the drones were also dark. These bees, although not so handsome as the bright-coloured ones, are perfectly pure, and are considered as good as any. The Italian breeders select bees with three bands for export, as there is a demand for them often regardless of the other qualities, as we have had ample opportunities of proving. We saw many more things, and much enjoyed the society at this Italian villa. As we walked by the side of Dr. Bianchetti in the vine-covered streets of this picturesque village, we were conscious that this benevolent, open-hearted, 'grand old man,' who ministered gratuitously to the bodily wants of the villagers, was deservedly beloved by and dear to them all. Men, women, and children, greeted him in a friendly manner, and for all of them he had a kind word and a pleasant smile. Is any in the village in want of a meal, he will always find the portals of the villa open to welcome him, for no deserving person is ever shut out here.

Our visit at last came to an end, and we started on our journey to cross the Simplon, the scenery of which we once more enjoyed. The night was spent at Iselle, and the next day, bidding adieu to Italy, we entered Switzer-

land; the upper pastures were a mass of white and yellow anemones, yellow violets, and other Alpine flowers, whilst almost peeping from under the snow, a great deal of which we had to pass, were the pretty soldanellas. Although it was the 8th of June, there were still large masses of snow, which made the route very bad, and we did not reach Brigue until late, and five hours afterwards Lausanne.

We shall never forget our visit to Ornavasso, and will always look back with pleasure upon the happy days spent in the company of Dr. Bianchetti and his charming family. Although Dr. Bianchetti is seventy-six years of age, we hope he may still be spared many years to pursue his useful life amongst the people of Ornavasso.

AMONG THE CARNIOLAN BEE-KEEPERS.

(Remarks on Mr. T. B. Blow's Article.)

Those who have never visited Carniola found much of interest, no doubt, in the Mr. T. B. Blow's article in the *British Bee Journal* for Dec. 2nd, 'Among the Carniolan Bee-keepers,' and, in fact, Mr. Blow seems to be able to carry his readers along with him on his trip of a week's duration. But after so short a time in the province, with whose language, I believe, Mr. Blow is not acquainted, it could hardly be expected he would avoid slight mistakes. The object of this communication will be to offer a few remarks as corrections, and others as comments on opinions advanced by Mr. Blow, the design not being, however, to detract from the merits of the article, but rather to supplement it.

Speaking of the bees of Trieste, Mr. Blow says: – 'They are a rather mixed race, being in many cases slightly striped with yellow.' The most skilful bee-master resident in Trieste said to me in October of this year: —'I suppose the bees of Trieste have now become somewhat mixed: but before a lady here introduced Italians, and before I got Cyprians, our native bees were like the Carniolans.'

Mr. Blow says:—'Mr. Dokoupil sends queens to America, and uses a form of the Benton travelling block in which to mail them.' His cage is a rough imitation of that devised by me for queen transportation, and, having known something of his faulty packing, I very much doubt his having ever landed a queen safely in America, though aware that not a few over there have been waiting for a long time in hopes he would try to do so. When reading what the article says of Mr. Dokoupil, and also farther on the statement, 'The greatest man was left till last to visit—Mr. Ambrozic,' the regret comes to me that Mr. Blow did not visit some of the large apiaries in South Carniola, for, having visited the latter as well as those Mr. Blow mentions, I can certify that by far 'the greatest man' was left out. A number of large apiaries can be found near Laibach—hundreds of stocks in frame-hives, too. At one place can be seen a large hive and foundation factory, and an immense stock of bee-keepers' supplies. Side by side one sees the Vienna Association standard, the straw Prinzenstock, the Berlepsch and Dathe frame-hives, the arched straw hive of Gravenhorst with its bow-shaped frames, and the shallow frame-hives used by some bee-keepers in Carniola, and which are especially suited to their system of migratory bee-keeping.

Referring further to his visit at Mr. Ambrozic's, Mr. Blow writes:—'They were busily engaged in breaking up condemned stocks and packing the queens in boxes for sending away. This,' Mr. Blow says, 'is the custom all through Carniola, and is the reason why the supply of queens is so uncertain during the spring and summer months.' I can confirm this, having visited Carniola repeatedly at various seasons, and often having met with difficulty in obtaining as many queens as I wished. The experienced bee-keeper will know, too, the sort of queens likely to be obtained in a shipment made up from condemned stocks. Of course after-swarms and old stocks which have over-swarmed will have young queens which, if mated, are generally good ones, but such queens as are below the average of their race are also quite apt to be found at the close of the season at the head of stocks which are unfit for winter, and so one gets good, bad, and indifferent, all in a lot. Moreover, when these queens obtained from condemned stocks in Carniola are put into nucleus-boxes to send away, the ineffectual fastening in of the combs and their daubiness –or, in a word, the carelessness used by those who take up the stocks in packing the queens—causes me no little surprise, and I wonder if any considerable number of those sent off manage to live beyond the limits of the Continent. Perhaps I can throw a little light on the 'particular plan of Mr. Ambrozic for sending queens to South America,' of which Mr. Blow says, 'It consisted of a bar full of little cages made of queen-excluder zinc; each bar would contain twenty or thirty cages. Queens were put in these, and the bar placed in the travelling hive with one or two bars of food, and then two or three pounds of bees, mixed from various hives, were put in.' He then adds, 'I doubt whether many would reach their destination alive, though Mr. Ambrozic assured me of its success.' The latter showed me this same device in 1883, but did not say he had tested it—only asserted his belief it *would* succeed, and asked what I thought of it. Now, Mr. Blow was at the disadvantage of having to get his information through an interpreter, who was not, as I understand it, himself familiar with bee matters; on the other hand, I spoke directly with Mr. Ambrozic, and certainly did not gain the idea at the time of my visit at his place that this method of sending queens had ever been tried by him. Perhaps he has done so since, but I incline to believe that it has more likely been with this as with the other 'appliances' of which Mr. Blow says, 'he had a lot to show, but it was noticed he used the old boxes in his apiary and not the more modern hives.' If it is of sufficient importance to Mr. Blow to follow up the matter, I will agree, if he will forward me an inquiry addressed to Mr. Ambrozic, to translate the same and send it on to this gentleman. Also I might communicate a plan by which forty queens or so can easily and safely be sent in *one* stock of bees on quite a long journey. This will *not* be that referred to by Mr. Blow as 'adopted by Benton and Jones some years ago.' Here I must protest strongly. I never *adopted* the plan referred to 'of putting several queens in separate wire cages, and a lot of bees to take care of them.' This plan was entirely of Mr. Jones's getting up. In the spring of 1882, while I was in Syria, he wrote me describing it, and requesting me, on account of great cost of transportation for heavy nucleus boxes, to send him a consignment of queens packed in this manner. Mr. Jones was sanguine of success, and, though myself very doubtful of it, as the queens were to go at his risk, I still complied with his instructions, merely carrying out what I thought to be an additional precaution, viz., that of putting a little bee-candy in the bottom of each wire-cloth cage: but it seems even this did not save them, perhaps because I had not then succeeded in preparing the candy as well as in later years. Though my faith in the plan suggested (if original with him) by Ambrozic is not unbounded, I believe it worthy a trial, and had a piece of excluder-zinc happened to have been at hand when I was sending a couple of queens on a short journey by parcels post, I think I would have begun by making such a test. Fair success by other methods has, however, prevented my going out of my way to try a plan entirely different. But if it should be eminently successful when employed in sending queens on very long journeys, it would be worth while, since it would materially reduce the cost of packing, as compared with the plan of putting each

queen in a separate nucleus, and, in the case of large consignments, transportation would be less.

With some of Mr. Blow's conclusions I cannot agree. For example, he says: 'Carniolans have not that restless tendency that all other races have, and therefore they travel well.' In wintering it is true they are remarkably free from any 'restless tendency,' but my experience in sending bees to distant lands convinces me that, in general, Eastern races stand long journeys far better than any European bees—a point I mentioned in American bee papers some three years ago. Their vitality seems greater, enabling them to hold out long after European races have succumbed.

Again, Mr. Blow says, 'the Carniolans do not run in heaps at the bottom of the bars, or fall off the combs like the majority of races of bees do.' It is very true they do not have this fault, which, so far as I know, is possessed only by blacks and Palestines ('Holy Land bees'), but as these two races do not constitute *a majority* of all races of bees the assertion contained in the quotation is not strictly accurate.

I am very decided in my view that another of Mr. Blow's conclusions demands modification, and as it is a point of no little moment I may be pardoned for dwelling upon it more at length than the two preceding. Mr. Blow concludes 'that, as a race, the Carniolans are ahead of any race of bees that he knows of.' Had he forgotten *that he knew of the Cyprians?* or would he still assert 'that the climate of England is not suitable for them,' or that they are extremely difficult to control? At any rate *if Mr. Blow puts Carniolans ahead of Cyprians,* I must take issue with him. If he has not learned to manipulate Cyprians himself, as easily as any other race, the fact that Messrs. Cheshire, Simmins, Hole, and a host of others, without the necessity of resorting to carbolic acid, but by the simplest means imaginable, do know how to do this, *proves conclusively that, just as I have been claiming for years, such manipulation can be performed.* Also the testimony of these and many others indicates that Cyprians, so far from being unsuited to the climate of England, do admirably in it, while from Scotland, Norway, and Sweden, come decided reports telling how well they do in those more rigorous climates. Again, here in Bavaria they are ahead, and a rawer, more changeable summer climate I have never seen: though this region is much south of of England, it is some 1800 feet above the sea-level, and cold winds from the snow-covered Alps sweep over the Bavarian plateau, bringing with them in midsummer heavy rain-clouds from which streams of water are poured down, these cold rains frequently lasting many days at a time with never a sight of the sun meanwhile. I have even known it to rain every day for twenty-one days in succession in July and August, and when it slackened enough to permit me to do any work with bees I frequently come in from putting up queens chilled through myself and my fingers numb with cold! And yet in this climate I find Cyprians best, next to them Carniolans. Cyprus may be said to possess a climate quite the reverse of this: no rain, constant sunshine, and extreme heat all summer, and no doubt Cyprians are the best bees for that climate.

As to the actual productive capabilities of these two races, careful experiment and comparison by one who deals with each *in accordance with its peculiarities,* will always result, I feel sure, in favour of the Cyprians. Notwithstanding this, Carniolans may very possibly become more *popular* than Cyprians, and this for several reasons. The difference which must necessarily exist in the price of imported queens of the two races, and, until many separate and large apiaries of each race are established for queen-rearing purposes, the influence which this must have towards keeping the price of home-bred purely-mated Cyprians above that of Carniolans, operates greatly in favour of the latter. Moreover, it seems to me the successful manipulation of Cyprians requires more accurate observation of conditions, greater foresight as to what is needed, skill and delicacy of touch,—in short, Cyprians are the bees for the skilled specialist who can take advantage of their many superior traits, which culminate in their wonderful energy as honey-gatherers. They reward his extra skill just in the same proportion as they punish blundering work. Had Mr. Blow said, *Carniolans are ahead of all other European races of bees,* I would have subscribed to it with no exceptions.

But on the whole it seems to me a mistake to compare Carniolans with Cyprians, or for that matter, with any Eastern race, for they are so dissimilar that, before deciding which should have the preference, the particular circumstances of the bee-keeper should be taken into consideration. I would recommend the beginner who lacks confidence in himself to try Carniolans.* But a novice even, who has steady nerves, who is a careful observer, and willing to start out with no prejudices derived from hearsay, may begin with Cyprians, and is quite sure to meet with no difficulty, and soon to conclude *Cyprians are exceedingly tractable bees* if he but follows in the main the advice of Mr. Cheshire in manipulation.† He who wishes white comb honey had better take Carniolans, since, in capping their combs, they equal, even if they do not excel, the blacks in giving them snowy whiteness. But if the greatest number of pounds of equally fine honey, either comb or extracted, be desired, Cyprians are the bees *par excellence.* For all purposes the first cross between Cyprians and Carniolans is very desirable. I believe I first called special attention to this particular combination, and I notice that those who have tried it recommend it highly, notably Mr. Samuel Simmins. It seems to me, then, everything considered, there are just two races to choose from—Carniolans, the best among European bees, and Cyprians, the best Eastern race. And perhaps the majority of honey-raisers would find it profitable to keep a pure queen of each of these to breed from, and permit drones to be hatched in selected stocks of both races. All young Cyprians that mate with drones of their own race could be devoted to the raising of extracted honey. Carniolans mating with Carniolan drones could be given cases of sections for comb honey, while the stocks headed by queens of either race that have mated with drones of the other race could be put at work for comb honey or extracted, as might in each individual case seem desirable; it being borne in mind that the crossing of the two distinct breeds breaks up the fixedness of type, and that therefore the progeny will, in some instances, resemble one parent, and in other instances will be like the other parent, although in each case the blood be exactly half and half. It being pretty generally admitted that a queen possessing no mixed blood will produce pure drones, no matter how much such a queen may have mated, it will be seen that only pure Carniolan and pure Cyprian drones will be raised in the apiary if all stocks are headed by imported Cyprians, imported Carniolans, or daughters of these, or purely fertilised home-bred queens. To this end I would limit the production of young queens to such stocks as have purely-mated mothers, avoiding, of course, all bad-tempered stocks, and selecting the most productive ones. Queens whose workers show themselves especially vicious must not be allowed to raise a single drone, even if themselves

* Upon reading this sentence to Mrs. Benton, who has been with me in Carniola, and also two years in Cyprus, and has had much experience in handling both races during the past two years, she remarked, 'I wouldn't recommend a beginner to start with Carniolans. He can handle pure Cyprians just as well as he can Carniolans. One can depend on Cyprians, but cannot on Carniolans.'—F. B.

† I would not banish smoke entirely in manipulating Cyprians.—F. B.

retained in the apiary at all. The importance of having only selected males should not be under-estimated. In common with many others I am satisfied that, while giving great heed to the character of the queens from which to breed, I have left the production of drones too much to chance. The introduction from time to time of fresh blood in the shape of an imported Cyprian or an imported Carniolan queen would serve to keep the stock from degeneration, which, without perfect control of the mating, might take place through too close in-and-in breeding.

It will not do to say, as I am sure some may be disposed to do, that I express these opinions simply because I sell Cyprian and Carniolan queens. I supply other queens as well, and the profits on them are greater. For example, Italians, hitherto more popular than Carniolans, cost less in Italy than Carniolans in Carniola: likewise Palestines and Syrians, to popularise which (under the name 'Holy Land bees') great efforts have been made by some, are cheaper in their native lands than Cyprians in Cyprus. More than all this, my friend and pupil, Mr. Ph. J. Baldensperger, of Jaffa, would supply me with these in any number, so that the expense, inconvenience, and suffering, incident to the annual journey I have made to Cyprus after Cyprians, might be avoided, if I could conscientiously recommend Syrians and Palestines in preference to Cyprians; also, the supply of Italians would not be limited in spring and summer as Mr. Blow says that of Carniolans is, a statement which my own experience corroborates as well.

Mr. Blow's words, in reference to this last point, are as follows:—'As far as I saw, no one knew how to raise queens scientifically in Carniola, and the supply is from condemned stocks only, and until some one does raise queens systematically we shall never be able to get a certain supply.' Of this I have long been aware, having, upon the occasion of my first visit to Carniola, early in 1880, noted that in queen-rearing the Carniolan bee-keepers were behind the times; nor have I been able during later visits—the last one made in October of this year—to discover any progress in this branch. With this before me, and being quite agreed with Mr. Blow when he says, 'The Carniolans have undoubtedly a great future before them,' I am disposed to pursue with this race a course similar to that I have followed with Cyprians—a course which is, however, very different from the convenient plan of remaining at home and purchasing Italian, Syrian, and Palestine queens, and recommending my customers to let the others 'go by the board;' in fact, after several rather unsatisfactory years of experience in trying to get a regular supply of such grades of Carniolans as I wanted, I decided this past summer I would establish a queen-rearing apiary in Carniola itself. Mr. Blow will doubtless recall mention I made of this plan in a letter written him from Cyprus last August. Its execution I will undertake personally at the approach of spring, and may thus reasonably hope to do, during 1887, something at least toward removing the difficulties which Mr. Blow, as well as others, have mentioned. — FRANK BENTON, *Schwabing, Munich, Germany, Dec. 6th*, 1886.

ASSOCIATIONS.

HUNTS BEE-KEEPERS' ASSOCIATION.

A meeting of this Association was held on Saturday afternoon, November 24th, at the Fountain Hotel, Huntingdon, for the purpose of distributing the prizes which were awarded to exhibitors at the last show, and for other business.

The Earl of Sandwich presided, and there were also present Captain Fellowes, M.P., Mr. T. Coote, jun., Mr. John Linton, Revs. C. G. Hill and James, Messrs. J. Howard (Holme), Z. Hobbs, T. Cooke, J. H. King, &c., also Mr. C. N. White, the hon. secretary.

The noble chairman announced that the first business was the distribution of prizes to the successful competitors at the last show of the Association, and that afterwards there would be a discussion on the subject of bee-keeping, which would be introduced by the hon. sec.

The prizes were then presented as follows:—

Class 1—1, T. Cooke; 2, J. Howard, sen. 2—1, J. Howard, jun.; 2, J. Howard, sen. 3—1, J. Howard, sen. 4—1, J. Howard, sen. 5—1, J. Howard, sen. 6—1, C. N. White; 2, A. Childs; 3 and 4, J. Howard, sen. 7, silver medal—1, T. Cooke; 2, J. Howard, jun.; 3, J. Howard, sen. 8—1, T. Cooke; 2, J. Howard, sen. 9, bronze medal—1, J. Howard, jun.; 2 and 3, J. Howard, sen. 10—1, Rev. H. Gee. 11—1, J. H. King; 2, Bull. 12—1, J. H. King.

Mr. White then introduced a discussion on 'Our Association and its Work.' He said that since the Association was instituted in 1882, the committee have done their best with the funds at their disposal to spread knowledge, with the view of making bee-keeping a national industry. It was a question worth asking—had they carried out the purposes of their existence? and, if not, where had they got, and how should they proceed in the future? The Association was started to encourage and advance bee-keeping, more especially amongst the agricultural and other labouring classes in the county, and last January a resolution was passed to facilitate that class taking a large share in the management of the Association. He was afraid they had some cause for disappointment. Only a very small percentage of the members—about eight per cent—claimed to be recognised as cottagers, and the members who have received the greatest benefit were the amateurs. The plans they laid down were (1) diffusion of knowledge of bee-keeping by means of lectures, (2) the circulation of bee-literature, and (3) the holding of shows and the giving of prizes; and, lastly, the sending of an expert to examine members' apiaries, and to give advice. As regards the first item, he should be well within the mark if he said that not twenty places in the county had been visited, the funds not having been sufficient to defray the necessary expense. They had only circulated the *British Bee Journal*, and this had worked satisfactorily. There were thirty-two members receiving the weekly issue. The shows have been uniformly successful, but the honey fair has been a complete failure. They had not been able to employ an expert; but members of practical experience had given their services to the members freely. He had himself visited many members. As regards the future he should like to see the county divided into districts, each presided over by a district adviser; but he saw that this was impracticable, as he knew of no one able or willing to undertake such duties. Therefore, they would be obliged to go on as heretofore. They ought to arrange for the giving of free lectures in every town and village in the county. Whilst they would not be able to promise such high prices for honey as in the past, they would be able to show how more could be obtained, and that there was nothing a man could take up which would pay so well as bee-keeping. The difficulty, hitherto, had been how to get rid of the honey; but they would be able to solve this problem, as well as to show how the price, which was now highly remunerative, would still be so, even if it got lower still. The question of the prize list should receive consideration, and he would suggest the formation of three classes, viz., professional, amateur, and cottager, with an annual subscription of *5s.*, *2s. 6d.*, and *1s.* respectively. Their annual shows might be held in connexion with the agricultural shows, and the committee of management ought to further it as much as possible, and give them a subscription.

An interesting discussion followed, in the course of which the noble chairman gave notice that at the next meeting he should move an alteration in the system of prizes. He should move that there be one class for amateurs, and another for cottagers; and in order to

prevent prizes falling into the hands of two or three individuals, he should move that no one shall receive more than one first and one second in the same competition.

A vote of thanks to the noble chairman brought the proceedings to a close.

BEE-CULTURE IN LANCASHIRE AND CHESHIRE.

At a representative meeting of bee-keepers and those interested in apiculture, which was held in the large room at the Bear's Paw Restaurant, Lord Street, on the 13th December, 1886, under the auspices of the Association, there was a most interesting exhibition of hives and honey and bee-keeping appliances, with specimens of honey produced in foreign countries and at home. A comparison of the home produce such as that of the Scotch heather honey sent by Mr. Raitt, of Blairgowrie, of the English heather honey contributed by Mr. Liddell, of Lancaster, and of the white clover honey, lent by Mr. Carr, of Higher Bebington, with the samples of Chilian, Californian, and Cuban honey comprised in the exhibits of products imported by Messrs. Haw, Gardner, and Co. (Liverpool), show the superiority of the British produce in appearance, flavour, and cleanliness. The two counties have obtained distinction for the excellence of the honey which they put into the market, and at the recent county competition at South Kensington this Association secured the prize for its white clover honey. Of this particular kind of honey there were several samples shown at the meeting. A great deal of attention was bestowed on the Heddon hive, which is attracting notice in America, and has been the subject of much controversy on this side, where it has met with very little approval from bee-keepers. As a marked contrast there was shown the Bebington Carr-Stewarton hive, which is said to afford greater security in the frames and greater ease in manipulation. The difference in the two hives was fully described by Mr. W. Broughton Carr, one of the most successful of British bee-keepers. The other exhibits included microscopes lent by Mr. H. H. Williams, of South Castle Street, Mr. Guest, Dr. Packer (Huyton), Mr. J. Forest, and Mr. Cobham (of the Bear's Paw). Lantern slides illustrating the different systems of manipulation employed in the past, and those at present in use, and showing the improvements that have taken place of late years in the appliances of bee-culture, were contributed by Mr. A. Watkins, of Hereford. The Association were greatly indebted to Messrs. Abbott Brothers for their valuable and instructive exhibits. It was thought that the representatives of the Ontario Bee-keepers' Association, who have been in charge of the honey exhibit at South Kensington, would have been present, but they were unable to attend. Among those present were Mr. C. P. Titherley, of The Limes, Wallasey (chairman of the Association); Mr. R. F. Anderson, West Derby (one of the hon. secretaries); the Rev. J. F. Buckler, the Rectory, Bidston; Mr. A. Bathgate, Cressington Park; Mr. W. B. Carr; Mr. J. M. Gibbs, Lower Bebington; Colonel Heme (Chester), Messrs. W. E. Little (Chester, one of the hon. secretaries), Wm. Liddell (Lancaster), W. Lyon (Whiston, near Prescot), G. Roberts (Broadgreen), C. Wade (Lytham House, Kirby), H. H. Williams (Birkenhead), W. Lees McClure (Whiston), F. H. Carr (expert of the Association, Higher Bebington), J. A. Bally (auditor), Dansford (Frodsham), William Tyrer (Prescott), W. M. Mellor, J. Atherton, J. Williams (Great Donghall), T. Moss (Preston), Danby (Seacombe), G. Atkin (Birkenhead), Blake (Park Road), Pape (Oxton), the Rev. Sheffield Hardinge (of Barrow, near Chester), and a number of ladies. The Rev. J. F. Buckler read a paper which had been written by Mr. Raitt, describing a Scottish bee-keeper's impressions of England. Mr. Raitt testified to the enthusiasm displayed by English bee-keepers; to the good quality of honey turned out; to their delightful *esprit de corps;* to their unbounded hospitality; and said what he was most of all struck with was the magnitude of the industry. Accustomed to nothing very imposing in the apiary line, it was a sight for him to see apiaries of from 100 to 300 hives; to have one maker tell of an order for 700*l.* worth of straw skeps; another that he had disposed of 1500 during the season, and turned out about four tons of metal ends, and to see stacks of timber, steam machinery, &c., for hive-making and the production of the accessories of bee-keeping. Considering that this was the first meeting of the kind held in the district it was very satisfactory and encouraging. In the evening the members of the Association and friends dined together, several toasts of a congratulatory and complimentary nature being proposed.

WROCKWARDINE BEE CLUB.

On page 437 will be found an account of the establishment of this bee-club; and we are pleased now to be able to give a report of its first annual show.

This was held in the Boys' Schoolroom, Wrockwardine, on Wednesday evening, November 24th, and the proceedings were of a most successful character. The society numbers 21 members, and a fresh accession of members is now being made. Considering that this is the first show held by the Club the results are very satisfactory and highly creditable to the members. The exhibits bore evidence of good supervision and management, and of the value of good and practical local instruction, which the Secretary, Miss Eyton, from her intimate knowledge of apiculture, has been able to impart to the members. The section honey was very well got up, and there were some extra good samples of extracted honey in bottles. The hives were well constructed, though open to a few improvements, which were pointed out by the gentleman who subsequently lectured upon the subject of apiculture and of whose admirable and practical remarks the members will no doubt avail themselves.

In the evening a very enthusiastic meeting was held presided over by Mr. J. Beattie. The balance-sheet was presented, showing, after all expenses had been met, a balance in hand of 5*l.* 4*s.* 10*d.* A vote of thanks was presented to Miss Eyton for her valuable services in the conduct of the club; also to Mr. Henry Brookes for his efficient assistance.

The following is the prize list:—Open to all members—Class 1, one dozen 1-lb. sections of honey: No exhibits. Class 2, twelve 1-lb. bottles of run honey: 1st, Mr. J. Palmer: no other prize. Class 3, for any super other than sections: 2nd prize, the Vicar, the Rev. A. P. Salusbury. Open to cottagers only—Class 4, the best and most complete hive made by exhibitor: 1st, Mr. John Shuker (Allscott); 2nd, Mr. James Shuker (Allscott); 3rd, Mr. Mainwaring (Charlton). Class 5, four 1 lb. sections of honey: 1st, Mr. John Shuker (Allscott): 2nd, Mr. Thomas Shuker (Longdon-on-Tern). Class 6, four 1 lb. bottles of run honey: 1st, Mr. John Shuker (Allscott); 2nd, Mr. Thomas Shuker. The bee appliances for use of the members of the Club include a large extractor, a storing vessel, a wax-melter, drawers of sections, feeders of various classes, foundation fixers, smokers, honey knives, &c., and were an excellent lot. There was a large quantity of run and comb honey and wax exhibited for sale by members of the Club and a quantity of useful literature upon the subject of apiculture.

Subsequently a lecture on the management of bees was given by Mr. J. R. W. Hole, of Tarrington, and expert to the Herefordshire Bee-keepers' Association. The lecture was excellently delivered, and Mr. Hole's

remarks were listened to with much attention and highly appreciated, and at the conclusion he was accorded a hearty vote of thanks.

FRANCE.

At a meeting held recently in Paris, by the Société Centrale d'Apiculture et d'Insectologie, one of its members, M. Fallou, brought under the notice of the assembly a bouquet of rustic flowers, grown in his garden and much appreciated by his bees. The plant is commonly known as 'Chardon Notre-Dame,' 'Chardon-Marie,' or 'Chardon-bleu.' Whereupon several of the members present begged of M. Fallou to favour them with seedlings, by which means this bee flower can easily be propagated. M. Fallou replied saying that he placed what he had at their disposal, adding that his address was 'Rue des Poitevins, No. 10, Paris.'

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The Editor of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. Huckle, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of November 1886, amounted to 2527*l.* [From a return furnished by the Statistical Department, H. M. Customs, to E. H. Bellairs, Esq., Wingfield House, Christchurch.]

DIRECT INTRODUCTION.

[743.] 'A Hallamshire Bee-keeper' (735) again comes forward with assertions and imputations which have no foundation in truth; this time in reference to my methods of introduction.

I am sorry to see that your correspondent is so muddled in his statements, and so blind as not to know that since my original plan was published, I have advocated two others; one of which has of late been so well spoken of without further mention upon my own part since I forwarded particulars to the Editor, who inserted the same in the issue of Feb. 4th. Your correspondent is in error in supposing that the same was an extract from my pamphlet; but, nevertheless, what need is there for him to so pervert facts as to say that I have not described the plan in the *Journal?* It *has* been published there, and that is enough, as the public have seen and appear to appreciate it.

If 'A Hallamshire Bee-keeper' attempts again and again to drill his method into the minds of bee-keepers, only to draw out further commendations in favour of my own plan, that has been his own doing, and none of my seeking. I have purposely refrained from entering the discussion upon this subject, as it appears to me that nothing further is to be gained by so doing; and I am only now forced to reply in the interests of truth and justice, as the unfounded statements brought forward by your correspondent are without the shadow of reason.

'A. H. B.' when first advocating his law (?), stated that 'A queen could be run in at the *entrance* after the bees had been without the means of raising one for forty-eight hours. However, since my own later method has been before the public, it is amusing to see that in a recent communication he says the queen can be run in at *night* from the *top* of the hive.

The method advocated by Mr. Pond is this:—'Remove the queen at mid-day, and then,' he says, 'it is important that the new queen be run in at the entrance the same evening, or as soon as the bees cease work for the day.' It may interest your correspondent to know that in *B. B. J.*, Vol. xiii. p. 272, Mr. Pond calls this method *mine*, but I told him that I do not claim it, and that it was his own idea; though he has since mentioned my name in *Gleanings* in connexion therewith.

'A. H. B.' suggests that I gave the above in my [non-swarming] pamphlet, because Mr. Pond would have seen it and recognised it as his. What he means I do not know, as my three separate methods are therein explained, and then follows Mr. Pond's, to whom I give full credit for his plan of introduction. But to show how absurd is 'A. H. B.'s' process of reasoning (?) I will state that as Mr. Pond long since opened a private correspondence with myself, he happened to know of my starvation method as now used before any mention of it appeared in this country.

It so happens that I have practised the starvation plan for the past five years when giving a queen alone, and the same is mentioned in my original pamphlet, p. 8; but to make still more certain, I decided to run the queen under the quilt at *night*.

I have always condemned the practice of running queens in at the entrance, because (1) in the evening (leaving out of question the day-time) the bees are still on guard; and (2) even at night, the queen must first pass *all* bees ere reaching the brood-nest; (3) she is more liable to chill. When passed down from the top of the frames, the queen is placed immediately among young bees, who are more respectful to the new comer, and she therefore at once makes herself at home; and under my own conditions is only too glad to 'ask' for food.

We have many times seen it stated that bees are more easily united in the evening, or, as generally understood, an hour or so before darkness comes on; but having observed how completely 'restful' bees were when examined by lamp-light, I came to the conclusion that if the strange queen were inserted under that condition, they would not even notice the advent of another monarch. That I was correct, many successful insertions have proved.

The plan I advocate, now under consideration, as being distinct from any other, and original with myself, is as follows:—

1. The queen must be kept alone for not less than thirty minutes.
2. She must have no food meanwhile.
3. She must be inserted at *night*, by lamp-light.

I was the first to advocate these three important items in connexion with 'Direct Introduction,' and I here challenge 'A. H. B.' to *prove* otherwise.

If your correspondent would like to know why this process has been more generally accepted than his own, it is this:—It does not matter in what condition the colony may be, whether it has queen-cells, uncapped brood, eggs, or no brood at all; whether long queenless, or only recently made so; my system applies to all.

No method can be called 'direct' which, while it is successful under only *one* condition, requires the same loss of time that caging does; and no practical bee-keeper can follow a plan which first necessitates that the stock shall either be deprived of all its brood, or wait until forty-eight hours after the bees have had no means of raising a queen.

In my non-swarming pamphlet, it is shown (p. 45) that if the queen be inserted at night after the thirty minutes' probation, it matters not how many days, or

hours, the stock has been queenless, and this alone makes a great distinction between my plan and that of either 'A. H. B.' or Mr. Pond; each of which provides for *one* condition only.—S. SIMMINS.

GALVANIZED VESSELS FOR HONEY.

[744.] 'J. M. H.' asks in the *Bee Journal* of Dec. 9 whether it is prudent to use galvanized vessels for honey. It is my decided opinion that it is *not* prudent to use such vessels. Galvanized vessels are coated with zinc, and this metal dissolves most readily in all acids, however weak. Honey being slightly acid would be sure to take up more or less of the metal, the salts of which are decidedly poisonous. Whenever a metallic vessel is used for honey it should be *tinned*, not galvanized. Some years ago I came across a sample of elderberry wine highly impregnated with zinc and of a positively poisonous nature; the elder juice had been kept overnight in a galvanized pail. It would be interesting to ascertain the amount of zinc contained in honey that has been kept for some time in a galvanized vessel. If 'J. M. H.' has such a sample I would thank him for a few ounces of it.—OTTO HEHNER, *Dec.* 9.

MORE EXPERIENCES.

[745.] For many years I have had a fancy for keeping bees, but the exigencies of a military life prevented my indulging my fancy until this year. Whilst stationed at Shorncliffe, in Kent, in 1882, with every prospect, as I thought, of staying there for some years, I went so far as to bespeak a swarm from a neighbouring bee-keeper. Unfortunately, when reckoning on a few years of comparative repose during the latter end of my military career, I had not taken Arabi Pasha into account; and before the bees were delivered I was *en route* to Egypt.

However, everything comes to him who waits. I retired from the army last autumn, and the early spring of this year found me settled in a north-country village, too broken down in health to follow any regular employment, but with a garden more than large enough to employ the whole of my time when health and the weather permit.

Considering my old *penchant* for bees, I could not well have settled down in a better locality. The neighbourhood seems a very paradise for bees. The village is as much a collection of orchards as of houses; and the few cottages that have not orchards adjoining them, boast of at least a few gooseberry, raspberry, or currant bushes. Then there is a very fair amount of clover in the surrounding fields, a little heather about a mile off, and a few mansions, with their surrounding gardens within easy bee-flight.

There are several bee-keepers in 'our village.' There are different degrees of 'light' among them however. Several keep to the traditional straw skep; some have begun to transfer their bees into frame-hives in the autumn instead of the sulphur-pit; while one, our village expert (uncertificated), of whom we are all very proud, and who is our common resource in times of difficulty or perplexity, has been keeping bees in frame-hives for several years, and with an amount of success that is very creditable to him. And, to add to the credit due to him, I must honestly say that his bees are the most demoniacally vicious bees it has been my lot to meet with. 'Demoniacally vicious' is a strong term; but if I could think of a stronger I would use it, without remorse. I know them. *Experientia docet.*

Swarms have been few, and late, this year in our neighbourhood, owing, I believe, to the exceptionally wet season; so, it was not until the 28th June that the 'hope deferred' of many years was fulfilled, and I was the happy (?) possessor of a swarm of bees,—the first swarm of the year, from the apiary of 'our village expert,' who, for the sake of brevity, I shall henceforth designate 'O. V. E.' By this time, so far as my experience enables me to judge, the clover honey flow was in full swing. We hived them in a bar-frame hive with half-inch starters of foundation.

And now, while my bees set to work to furnish and provision their new home, I set to work to store my mind with bee-lore. I had previously read Cowan's *Guide Book*, kindly lent me by 'O. V. E.' I now sent for a copy for my own every-day use; also a six months' subscription to the *B. B. J.*

To return to my bees. An examination on the 7th July showed every frame nearly full of comb, and honey and brood in abundance. I now put on a super filled with sections, thinking that, as the bees had filled their brood-chambers so nicely, they would readily furnish an upper room. The bees thought otherwise; they did not want an upper room: in fact, they positively refused to have anything to do with it. And now, from some cause or other, their diabolical characteristics began to assert themselves. It became impossible to approach them in the way of manipulations unless armed *cap-a-pié*. I had hitherto manipulated with a veil, but without gloves; 'O. V. E.' always uses both when manipulating, and well he might, considering the 'strain' he has to deal with: but I had the credit of the British Army to sustain, and must not show the least appearance of the white feather. The veil might be excused, in deference to my position as a novice; but, gloves? Never!!! However, after receiving six stings on one hand and one on the other, with the conviction that but for my veil I should have been utterly put to the rout, it dawned upon my mind that, some time or other in the remote past, I had heard a dim tradition to the effect that 'discretion was the better part of valour.' Since then I have condescended to use both gloves and veil when approaching this hive. Nevertheless, when uncovering them for any purpose, they have made furious onslaughts upon me, clinging round my wrists in scores, stinging wherever flesh was to be got at by diligent search; and, like bulldogs, utterly refusing to quit their hold, until taken off one by one and crushed between the gloved fingers, after the hive had been closed. They have not got winter-passages this year.

Notwithstanding my military training, I could not screw my courage up to the point of interviewing the defenders of each particular frame, and carefully boring holes through their several habitations. Blowing open the Cashmere Gate at Delhi was child's play in comparison. You are aware, of course, Mr. Editor, that the British soldier never retreats; but sometimes he retires. He is never defeated; but, now and again as the ages roll on, he meets with a reverse. In order to avoid a possible reverse, I discreetly retired from the attempt to cut winter-passages in this hive.

Seriously, if my experiences, so far, had been confined to the above colony, I fear my liking for bees would, by this time, be at a very low ebb indeed. And I really think that, in that case, if when I came to examine them in the spring I found them all defunct, I should heave a sigh that would have more of relief than of sorrow in it. Happily my experiences are not so confined, and I am proud to know there are bees that, with ordinary care, can fearlessly be manipulated without veil or gloves.

In my search after bee-wisdom during the summer, I made diligent inquiry round the neighbourhood for bee-keepers of experience, hoping to pick up a few crumbs of knowledge from any who had it and were not too crusty to part with it. The only one I could find was the Master of the Union Workhouse, about four miles from here. On making his acquaintance, I found him anything but crusty; on the contrary, all

the confidence I have acquired in the manipulation of bees has been gained from association with him in looking over his own hives, and in assisting him at driving. A curious and interesting circumstance occurred in connexion with one of my visits to him. He went, for my behoof, to one of his hives,—a colony of condemned bees he had saved from destruction, and with whose progress in comb-making and brood-raising he was much pleased. After taking out several frames and showing me eggs and brood in all stages of development, all this without veil or gloves,—his invariable custom,—we came to the one on which the queen was promenading right royally. This frame was then put back, the whole properly readjusted, and the hive closed. About twelve days afterwards, on again examining this colony, he found no eggs, no young brood, no queen. What had become of her? We could only surmise that in putting her back into the hive, and re-adjusting the frames, she must accidentally, in some manner, have been crushed; and yet he is so calm, fearless, and careful in his manipulations. If such an accident could occur to him, I should think it might occur to any one in the world. Fortunately, he was able to replace the queen by one saved from two driven stocks. This was done by Simmins' method successfully,—no caging. His manipulating preliminaries consist in blowing tobacco smoke into the entrance by putting a corner of his handkerchief over the bowl of his pipe, and blowing down it, causing the smoke to pour out in a regular stream from the mouthpiece into the hive. He then smartly taps the sides of the hive. He allows the inmates ten minutes to gorge themselves, once more during that time giving them a dose of smoke and a few smart taps. After taking off the hive-cover, a puff or two of smoke under the quilt, and all is ready. No fear of stings, and no necessity for veil or gloves. But, then, his bees are not 'demoniacally vicious.'

About the middle of September, a little bird whispered in my ear that there had been a great 'slaughter of the innocents' at a village about four or five miles off, where I had previously been given to understand no honey was going to be taken, on account of the bad season. 'O. V. E.' persuaded me to take a walk over there in the forlorn hope that some might be yet awaiting execution, and might be saved. I went. Truly the slaughter had been great. Two skeppists had carried out their dire purpose. One promised me his bees next year; the other had destroyed his whole stock, as he anticipated leaving the neighbourhood. One lot, however, I was able to save. They had been doomed to destruction for some time, but circumstances had hitherto delayed their fate. Permission being given, I went the next evening, accompanied by a friend to assist, and drove four skeps. Two were prime swarms, and two after-casts. Fortified by the confidence gained in association with my friend the Workhouse Master, I wore neither veil nor gloves, as I particularly wanted to save one of the young queens to take the place of the mother of my vicious lot. I regret to say I was unsuccessful though. Discover a queen and recognise her I could not. The two casts were united to the smaller of the two prime swarms, and the queens, to my deep regret, left to fight it out among themselves. I hope it was a case of 'the survival of the fittest.' The two lots were carried home in skeps, and successfully housed in bar-frame hives. I fed them up well with syrup. They have both filled out, or nearly so, five frames of comb, and have reared young brood. They are now packed up for the winter, with about 8 lbs. of candy on top of the frames, and I trust will successfully survive the cold weather.—SPERO.

Why are bees a commercial race? Because they *cell* their honey.

What trade do bees pursue? That of comb-makers.

Echoes from the Hives.

Lismore, Ireland, December 18.—We had the great storm here on the 8th inst., and the bee-hives did not altogether escape. Of my eighteen stocks all were roped down but three, one of which was overturned. Fortunately the mischief was seen at once, and remedied, but the work was not very pleasant; the bees, of course, thought *I* had upset them, and acted accordingly. I don't know many more disagreeable things than righting a hive in a storm of rain and snow, when the gusts are so violent one can scarcely stand. With regard to the yield of honey this season in Ireland, I think, with Mr. Stanford, it just depended on the swarming. With my hives I could not quite carry out all Mr. Simmins' instructions, but I went as near as I could, and, fortified by his pamphlet, succeeded either in preventing swarming altogether, or in throwing it so late that the yield of the hive was not affected by it. The late swarms I sent to the heather, getting some honey from them, and giving them the chance, which they made the most of, to build themselves into strong colonies for the winter. As far as I can see, those who like myself succeeded in stopping swarming, got lots of honey, but those who did not had only a poor harvest. One thing rather upset my calculations, and that was, that no honey almost was stored in the second storey of bar-frames. In the hives to which I gave extra room in this way, all the space was used for brood, with only about ¾ of an inch deep of honey-comb at top of bars. This was what I found, when having removed three tiers of sections I came, armed with the extractor, to work at the frames. There was nothing to extract. My fear is, I left these great colonies too short of stores at end of season, though I fed for a long time, and shall be glad to know what is the earliest time in the new year I may venture to begin giving syrup; as I fear for some of the colonies. I will not put in bars of candy or lift up quilts—I have seen too much of the results of early disturbance of hives, but I have fixed to my hives an appliance, of which more anon, by which I can give syrup without removing the lid, or disturbing the packing of the hive. We have sharp frost now, and for nearly ten days I have seen hardly a bee. I presume if syrup is given early to keep bees alive, it should be very thick. There is an unusual amount of furze and laurustinus in bloom here now; if bees could get out, they would find plenty of pollen.—F. W. C.

[As you intimate that you have some special device for feeding your bees without lifting the quilt, we should recommend that the time of feeding should be regulated in accordance with what you may consider to be the absolute requirements of the bees. The syrup should be of the consisteney of honey.—ED.]

NOTICES TO CORRESPONDENTS & INQUIRERS.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies, is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communication.

BEESWING. — *Extractors.* — Our correspondent inquires whether bodies of extractors could not be made of pottery or toughened glass. The weight of the first, the enormous cost of the second, and the liability of both to fracture, are sufficient reasons against the suggestion. Tinned iron is perfectly suitable and of this most extractor bodies are made.—F. C.

G. E. A.—*Feeders fitted with a zinc cap and stand.*—Our correspondent may quiet his fears, zinc is undesirable, yet it is being used in thousands of cases on feeding-bottles without apparent damage, simply because the thickness of the syrup causes all chemical changes to be slow, and the food is usually taken by the bees before appreciable harm is done. This is no new matter. An article of mine, published September 24th, 1874, after

pointing out the advantages of vulcanite (first used by myself) runs thus: 'Such indeed is the material I use with the bottle instead of a plate of perforated zinc, because it is at once a splendid non-conductor of heat, and a substance not affected in any way by any description of food. A plate of tin or zinc may be made of the same pattern, but it will not possess the desirable qualities mentioned.' Why not make the zinc surface hot and apply a thin coat of beeswax? The tongues of the bees will wear the wax from the holes, but the exposed surface will be too small to be seriously injurious. Vulcanite can be purchased in sheet of Messrs. Burge & Warren, Kirby Street, Hatton Garden; or of the North British Rubber Company, 4 Cannon Street. Sheet $\frac{1}{4}$ inch thick is suitable, and holes can be pierced in it where desired by a red-hot knitting needle.—F. C.

Bert.—*Galvanised Cylinder.*—If the rustiness has commenced it would be desirable carefully to apply a little of the varnish recommended by Mr. Cheshire on page 573.

J. W.—*Requeening two Stocks.*—The plan you propose would not answer. The small stocks you propose to make up would be too weak to do any good. You had better adopt the plan of making three stocks out of two, as described in Cowan's *Guide*. When the queenless stock has raised cells, make up a nucleus and give one, leaving another in the stock. When the young queen is fertilised requeen one of your stock and unite the other to the stock which has raised the queen. If you desire increase of stocks you can make up more nuclei and divide your other stocks when the queens are fertilised, giving each one a queen.

W. H. C.—*Californian Honey.*—The sample of Californian honey has been forwarded to Mr. Hebner for analysis, and he reports it to be 'genuine.'

*** *Title and Index of Vol. XIV. will appear in our next.*

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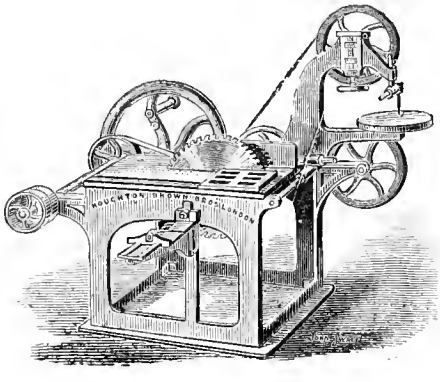

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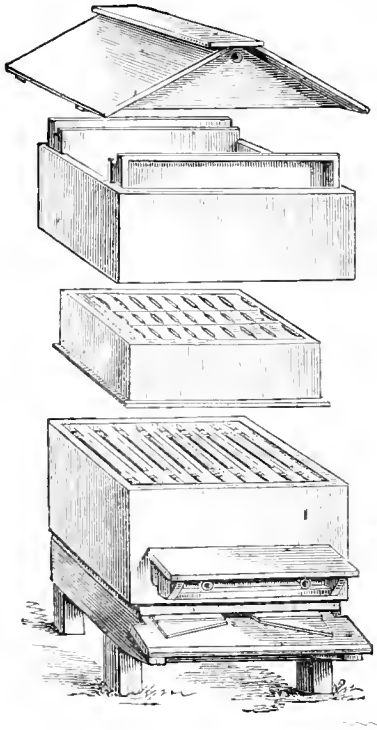
EDITED BY THOS. WM. COWAN, F.G.S., F.R.M.S., Etc.

[No. 236. Vol. XIV.] DECEMBER 30, 1886. [*Published every Thursday, Price 2d.*]

NEIGHBOURS' SANDRINGHAM HIVE.



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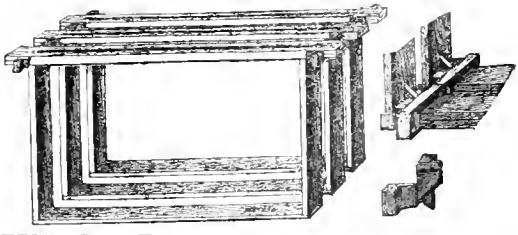

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THE
BRITISH BEE JOURNAL

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[No. 236. VOL. XIV.] DECEMBER 30, 1886. [PUBLISHED WEEKLY.]

Editorial, Notices, &c.

END OF VOL. XIV.

With this number we close the fourteenth volume of our *Journal*. Nothing indicates more the growing appreciation by the public of the industry which it is our duty to uphold than the ever-increasing enlargement of our volumes. The first volume of the *Journal* contained about 200 pages, this, the fourteenth, upwards of 600. This growth in size has arisen, not only from the large number of persons who have engaged in the pursuit of bee-keeping as a pleasing and interesting occupation, but also from the increasing number of those who have been induced to follow it as a profitable employment.

The mission of the *Journal* from the time it was launched on the public favour till the present time has ever been the same, namely, to act as a medium for the exposition and free discussion of all theories and systems relating to bee-culture, and of all hives and other bee-appliances, so that the truth with regard to them may be established. Our desire is ever to aid those members of the bee-community who already *cultivate* bee-keeping, and to induce others—amateurs, artisans, and cottagers—to engage in the same pleasant and profitable pursuit. And we gather from the position we continue to maintain in the public estimation that our endeavours in the past have not been fruitless. Bee-keeping and its results, through the exhibition of British honey and bee-appliances at the South Kensington Exhibition, followed by the more unique display of honey by the Canadian delegates, have been brought before the public in a very striking manner during the present year. This has conduced to a more general and earnest revival of interest in bee-keeping and its conduct on scientific principles, which will, it is hoped, restore honey to its former place in the domestic economy.

We desire to take the present opportunity of tendering our best thanks to all our subscribers, correspondents, and friends who have assisted us during the present year, and we trust that the year we are now approaching may be to all of us a pleasant, happy, and prosperous one.

EXPIRY OF SUBSCRIPTIONS.

To those whose subscriptions expire with this issue intimation is given of the fact in the usual way. The *Journal* is enclosed in a coloured wrapper, and contains an order form for the renewal of the subscription. We venture to hope that our friends will favour us with an early renewal of their patronage, and use their best endeavours to send us additional subscribers.

THE BRITISH BEE-KEEPERS' ASSOCIATION.

ELECTION OF THE COMMITTEE FOR 1887.

Members of the Association eligible to serve on the Committee are now being interrogated by the Secretary as to whether they will be willing to serve during the ensuing year. It is much to be desired that there should be a goodly number ready to undertake the duties of committeemen, more especially of those who reside within easy reach of London. The chief institution in the United Kingdom representing any particular industry should be well supported by its members in this respect. The outgoing Committee deserve our best thanks for the successful way in which they have conducted the business of the Association during the present year: no previous year (since the formation of the Association) has been productive of such good results to British bee-keeping. The Central Society has also been well supported by many of its branches, notably by Hampshire, Herts, Lancashire and Cheshire, Bucks, &c.

In Memoriam.

We deeply regret that we are called upon to record the death of Mr. B. M. Jenkins, F.G.S., the popular Secretary of the Royal Agricultural Society of England, who died on Friday, December 24th, after a severe illness. Our regret in making this announcement will be shared by the general body of agriculturists both in this country and on the Continent. By the ten thousand members of the Society, which he so well represented, his death will be regarded as a serious loss, and there will be considerable difficulty in selecting a successor to replace him. Notwithstanding the many onerous duties belonging to his special position, his energies found vent in the performance of useful public

service in many directions. Among others he did not overlook the fact that the pursuit of apiculture would be found of great service to farmers. In October, 1883, at the Lecture Hall, Dublin, he delivered an interesting lecture on the 'Duties of a Farmer's Wife,' in which he proved from statistics furnished him by Miss Gayton, of Much Hadham, Herts, that bee-keeping, if intelligently entered upon by the wives and daughters of farmers, 'would yield a welcome addition to either the farmer's money receipts or the food supply of his family, especially if he should have young children.' Not the least of Mr. Jenkins' services was in connexion with the Royal Commission on Agricultural Depression, presided over by the Duke of Richmond and Gordon. Mr. Jenkins was especially deputed by the Commissioners to collect evidence relating to the practice of agriculture in the north-west of France and the Netherlands, and the information gathered by him was greatly prized by British farmers and the agricultural press. The same remark applies to his reports on agricultural education to his colleagues on the Royal Commission on Technical Instruction, and the annual Journals of the Royal Agricultural Society bear ample evidence to his untiring industry.

MR. JAMES HEDDON.

During the visit of the Canadian delegates, especially at the Conversational meeting held at South Kensington, much was heard of the hive called the 'Heddon Hive,' and through the lucid explanations of Mr. D. A. Jones on that occasion we received an intimate knowledge of it and its working. Our readers will, we are sure, be interested in reading a short biography of its inventor, Mr. James Heddon, from the pen of Professor Cook. We are indebted to the kindness of Mr. A. I. Root, of Medina, Ohio, for placing at our disposal the spirited portrait that accompanies the memoir.

I am very glad to accede to the request to give a brief account of the life and work of Mr. Heddon. True merit should always be rewarded; and as I am acquainted with no more able, thoughtful, studious, and hard-working bee-keeper in the United States than Mr. Heddon, it is with no little pleasure that I call attention to his life, his work, and to the valuable results of his careful experiments and thoughtful, studious labours in the apiary.

Mr. Heddon was the first specialist in bee-keeping in Michigan, and one of the first in the country, and thus his fertile, active mind has ever been directed toward the pocket-book side of bee-keeping; and so, as we should expect, all his work, experiments, and influences, are right in the spirit of this intensely practical age. Best of all, from a long and intimate acquaintance with him, I feel assured that all his labour, both of hand and mind, has ever been impelled by an honest purpose and sincere desire to advance the vocation of his choice.

It has often been remarked, that Michigan owes much of her reputation for push and enterprise to the fact that most of her inhabitants came from New England, many gaining wide experience from a short stay in New York. Mr. Heddon took advantage of one of these New-York sojourns, as he was born in the rich Genesee Valley of Western New York, August 28, 1845. Thus he is now forty years of age. Like Patrick Henry he had no irresistible thirst for book-learning, much preferring his fish-hook, his gun, and a stroll in the fields and forest. Very likely this was owing largely to the faulty methods of the schools. Had the dull books of stupid text-book writers been replaced by the interesting things fresh from nature, how eagerly would this schoolboy have probed them to their very depths! No one can know Mr. Heddon without recognising at once that he is a natural student. Given the right mental food, and how eagerly would he have swallowed, digested, and assimilated it!

In stature, Mr. Heddon is below the average, while his form is slight and wiry. He is extremely nervous, and his keen, intense expression, and spare, almost pinched features, would lead Mrs. Harrison to remark that he was fed on mince-pie, ham, and sausage. But let me say that I have been there, and I know that excellent sense and the best taste and judgment rule in the Heddon kitchen. Mr. Heddon is gaunt and lean because he has a twenty-horse power nervous organism in a ten-horse power physique. His nervous tension and mental energy have always been vexed that their dwelling-house were not bigger and stronger, and are determined to destroy it; and it behoves our good friend to look sharply or they will succeed.

Mentally Mr. Heddon is exceptionally vigorous and gifted. The Rev. Mr. Gage once told me that he was especially interested in a certain young man in his village, who, with an opportunity, would certainly make a scientist. Years after I became acquainted with this same promising young man in Mr. Heddon.

As a speaker, Mr. Heddon is unusually vigorous. His sentences are always to the point, and his figures and illustrations are often irresistible. I have known him at our State Conventions to hold every person spell-bound as he explained, often at great length, his experiments, views, and methods. The same spirited, forcible style characterises his writings, as all who read the bee journals know. His nervous energy, excessive love of fun, and desire for hard-earned victory, make him an eager controversialist. He fairly grows fat, mentally, in a good, square, honest, intellectual wrestle. I have sometimes almost feared, I hope without reason, that his love of triumph made him to rejoice at the discomfiture of an opponent as much as in the victory of the right and true. I have also wondered if, as with most of us, prejudice might not at times warp his judgment respecting those who differed with him in view. His nervous temperament, and slight, overworked body, would make this possible. As he has sometimes written me in a complaining mood of some element in the bee-keeping world, I have thought of Christ's remark to Martha, 'Thou art troubled about many things,' and have wished we were all Marys who had 'chosen the good part' that should not be taken away from us.

How many of us have found the door to a delightful life in the most beautiful and charming girl of the world! This was doubly true of Mr. Heddon. The 'sweetest girl in the town' not only provided Mr. H. with one of the happiest homes in the State, but led him into apiculture. Miss Hastings' father was a bee-keeper, and with him Mr. Heddon worked one year. No wonder he advises all to take a year with an experienced bee-keeper. If he will furnish conditions like those of his own apprenticeship, I think few young men will hesitate. As little wonder that he looks so fondly on the 'gude-wife' when she took him from the dull routine, machine-like life of the clerk, into the active, pleasant, intellectual life of the apiary. This loving wife has been Mr. Heddon's only partner for the seventeen years of his bee-keeping experience.

Mr. Heddon has told me that he commenced bee-keeping with nothing except a stout heart, and he had given this away to that 'sweetest girl.' He has been a specialist all that time, except for a brief period of late, when he has sold supplies. This diversion he has told

me was a loss to him. Now he is worth thousands of dollars. He went into the supply business in 1879, in hopes, that by a circular he could answer many of the questions that now came to him in letters, and save time to his business. His present capital he credits almost exclusively to honey production. He has had as many as 550 colonies of bees at one time, which were kept in three separate apiaries. He now has 450 in two apiaries. In 1877 his Glenwood apiary, worth 1500 dollars, and numbering 99 colonies, gave him a cash income of 1070 dollars and increased to 207 colonies, all but two of which came through the following winter in good condition. The expense in caring for this apiary that year was 200 dollars. One year, with 16 colonies he increased to 33, and sold 800 dollars worth of honey. All of the 33 colonies wintered the succeeding winter. At that time honey sold for a very high price. His largest yield for one season, of a single colony, was 410 lbs., all but 48 of which was extracted. He once secured 29 lbs. 13 oz. of unripe extracted honey as the result of a single day's gathering of a single colony.

Of course, all has not been smooth sailing, as he has as large stories to tell of winter losses. He thinks the winter of 1884–5 snatched 1800 dollars from his pocket-book; yet he murmurs not, as he thinks that the winter solved the difficulty, and he will lose no more. We all hope he is correct.

Mr. Heddon is very neat and methodical. It is a very great pleasure to visit his place. I think I never visited an apiary where more taste and good judgment were displayed in all the arrangements of the bee-yard.

The valuable improvements which Mr. Heddon has given to our industry are many, and will most interest the readers of this sketch. All that I shall name, I feel certain are original, and nearly all I know to be excellent, from actual experience.

I have found the slatted honey-board a very valuable adjunct to the Langstroth hive. This, when made just right, keeps the sections perfectly neat. The spaces must be just over the centre of the top bars of the frames in the brood-chamber, and the spaces between top-bar and slats no more nor less than a bee-space. This prevents the brace-combs, and such a honey-board needs only to be tested to be retained in every apiary. His modification of the Langstroth hive, omitting the portico, the telescopic upper storey and cover, and the bevel of the Simplicity, have so pleased me, after a two-years' trial, that I would never think to return to the old styles. Those who condemn surely have never tried it. The shade-board is also much superior to tree, evergreen, or grape-vine.

Like myself, Mr. Heddon used sections before he ever saw them elsewhere. Though original with us, their use in our apiaries may not have priority.

Mr. Heddon's shipping-crate, as I state in my book, is neat and cheap, and was the first substantial improvement in that article.

The section-crate, with bee-space above and below, will probably never be excelled in securing comb honey without separators. After two years' use I pronounce it simply perfection. I was almost disappointed in not seeing it in the new hive.

I have already reviewed the new book, and there spoke of the new hive and system. There can be no question of the originality of these, and hardly less that they are a marked improvement and will soon come into general use. I have never tried these, but the experienced bee-keeper does not need to try every invention to be assured of its excellence.

Mr. Heddon has also practised the principles of breeding, as followed by our successful breeders of other domestic animals: that is, he has crossed two valuable breeds, and by selection has secured a strain, with the excellences of both the original races, and without their undesirable qualities. He claims this; and while I have not tested his improved strain, I am certain that the above is the method which must be employed to secure the best bee.

Lastly, Mr. Heddon suggested the 'Bee-keepers' Union,' which may and will be of great service to our industry. Each of us is liable to prosecution by the ignorant and prejudiced, and we need just such an organization to aid us in protecting our rights, and in maintaining the high position which our industry deservedly holds among the pursuits of the world.

Mr. Heddon has been President of the Michigan Association, and a very poor one he made. A president must be staid and serene, and without nerves, which does not describe our Dowagiac friend.

I wish I could say just how many children our friend has. This I know: That when at his house, some years since, among the many attractions I saw were some very beautiful children, those best ornaments in every home.—A. J. Cook, *Agricultural College, Michigan, May* 1886, *Gleanings in Bee Culture.*

An Old Cure for the Bee-fever.—If ye patient hath it very badly, let him hie to ye show and there buye himself a goodly number of ye wondrous wooden skeppes yclept bar-frame hives, and that ye cure may be more compleat let him buye only such as be sold 2 or 3 poundes each. If ye fevere still continue high let him go to a bee merchant of goodly repute and buye for ye hives bees of ye rare and curious races of Syria or of Italie—it being ye opinion holden of many learned masters that ye olde Englishe bee, like olde Englande herself, is nearly played out. If ye pulse still feel full and ye head hot, let ye patient procure himself ye many quaint contrivances sold by ye merchant, notablie ye waxen sheetes for garniture of ye hives. Also ye bookes of Master Cowan and other fellowe sufferers. When ye patient is sufficiently depleted ye maladie is usuallie abated. But if ye patient feel a desire to write to ye Editor a true historie of his maladie, ye case is indeed without hope. —*Discovered and communicated by* Honeysuckle.

Correspondence.

The Editor does not hold himself responsible for the opinions expressed by his correspondents. No attention will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only, and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to 'The EDITOR of the "British Bee Journal," *c/o Messrs. Strangeways and Sons, Tower Street, Upper St. Martin's Lane, London, W.C.' All business communications relating to Advertisements, &c., must be addressed to* Mr. J. HUCKLE, *King's Langley, Herts (see 2nd page of Advertisements).*

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

STATISTICS AND REMARKS ON THE CANADIAN HONEY EXHIBITION.

[745.] It will be of interest to your readers, now that the Colonial and Indian Exhibition is over, to have a few correct particulars of the Canadian honey exhibit. It will be remembered that at the time of the arrival of the honey, and before it was all unpacked, it was said that no less a quantity than forty tons of honey would be staged, and that of this about fifteen tons would be comb honey.

This amount had been promised to be sent by the members of the Ontario Bee-keepers' Association, and at the time above mentioned the information given me was based on these promises; the invoices at that time, not having come to hand, had not been examined as to quantities.

From different causes, several intending exhibitors were not represented at all. In consequence of having had such a bad season many exhibitors were unable to send anything like the quantity they had intended to do. Others, through some misunderstanding, did not send at all; the result was that the amount of honey at the Canadian honey house was far less than was anticipated. The quantity actually exhibited was 31,464 lbs. of extracted honey, and 6357 lbs. of comb-honey in sections, in all about 18·91 tons Canadian weight, or 16·88 tons English weight. The Canadian ton is only 2000 lbs., whilst the English ton is 2240 lbs., as we all know. The particulars as to the total weight of the honey and the number of sections were furnished me by the kind courtesy of Mr. Corneil.

The following are the names of the twenty-seven exhibitors, the quantities and description of the honey, the sizes and average weights of the sections sent by each exhibitor, all of whom reside in the province of Ontario:—

Name.	Address.	Extracted Honey.	Comb Honey.	Size of Sections.	Weight in Ounces.	
1. A. Bridge	Westbrook Ontario	224	428	$4\frac{1}{4} \times 3\frac{1}{2} \times 1\frac{7}{8}$	11·8	
2. M. Buglass	Bright ,,	3661				
3. M. Couse	Meadowvale ,,	1434	266	$4\frac{7}{8} \times 4\frac{1}{4} \times 1\frac{5}{8}$	14·8	
4. S. Corneil	Lindsay ,,	916	688	$5 \times 4 \times 1\frac{1}{2}$	12·4	separators
5. F. Dunn	Ridgeway ,,		220	$4\frac{3}{4} \times 4\frac{1}{4} \times 1\frac{5}{8}$	16·0	separators
6. J. K. Darling	Almonte ,,	1020				[too narrow
7. G. A. Deadman	Brussels ,,	500				
8. Will. Ellis	St. David's ,,		214	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$	16·0	separators
9. Martin Emigh	,, ,,		726	$4\frac{1}{4} \times 3\frac{7}{8} \times 1\frac{5}{8}$	12·8	
10. Wm. Goodyear	Woodstock ,,		369	$4\frac{5}{8} \times 3\frac{7}{8} \times 1\frac{5}{8}$	16·0	
11. Wm. Humphreys	Wallaceburg ,,	1120				
12. M. B. Holmes	Delta ,,	2540				
13. D. A. Jones	Beeton ,,	1510				
14. F. Malcolm	Innerkip ,,	1500				
15. R. McKnight	Owen Sound ,,	2040	1000	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{5}{8}$	13·8	
16. Mrs. McKechnie	Angus ,,	794	45			
17. Rev. D. P. Niven	Dromore ,,		328	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{5}{8}$	13·9	
18. R. Parker	Dunkeld ,,	1115				
19. S. T. Pettit	Belmonte ,,	2795	575	$4\frac{5}{8} \times 3\frac{7}{8} \times 1\frac{3}{8}$	12·3	
20. W. G. Russell	Millbrook ,,	504				
21. G. E. Saunders	Hornby ,,	1500	569	$4\frac{7}{8} \times 4\frac{1}{4} \times 1\frac{5}{8}$	15·7	
22. Jas. Stewart	,,	1100				
23. S. Truman	Kirkfield ,,	360				
24. Dr. Thom	Streetsville ,,	960	829	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{5}{8}$	15·2	
25. W. C. Wells	Phillipstow ,,	1499	100	$4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{5}{8}$	13·8	
26. T. G. Webster	Oakwood ,,	2860				
27. A. G. Williams	Carlingford ,,	1272				

I have worked out the average weight of sections in each case from the number of sections and the net weight of the exhibit. It will be seen that in some cases, although the sections are the same size, the weight varies considerably; this, I think, is to be attributed to greater honey flow in one district than another.

Only fourteen of the above gentlemen exhibited comb-honey, a large proportion of which was of very good quality indeed, the sections had comparatively few pop-holes, being generally well filled, nicely sealed, beautifully white, and the wood of sections clean and free from propolis; but, with few exceptions, they lacked the evenness of combs built between separators of proper width.

Three only of the exhibitors, having 1122 sections, used separators, Messrs. Corneil, Ellis, and Dunn, but those of the latter gentleman were too narrow, and the beauty of the appearance was spoilt by the comb projecting above and below, thus showing the usefulness of separators had been marred by this defect in width.

The exhibitors who did not use separators between the sections had most of the combs more or less bulged on one side or the other beyond the wood, so that very few of them could be glazed or put into a box singly without the face of the comb being damaged.

On opening a crate the difficulty arose as to which section could be taken out first without damage to the comb it contained, or of that in the sections on either side. The great advantage of separators can only be fully understood when the attempt is made to get the first filled section from the closely packed crate, and it is mere than likely that a little of the honey in the bottom of crates is the consequence of slight rubbing of the projecting combs when being put into the crate.

So far as my judgment goes, I think the comb-honey exhibited by Messrs. Corneil, Pettit, McKnight, Wells, Emigh, Saunders, Ellis, and Couse, very superior to that of the other exhibitors. That of the Rev. D. P. Niven and Dr. Thom was not good enough, and ought never to have been sent for exhibition, particularly the latter,

which consisted of very dirty and imperfectly filled sections.

All the honey has now been sold, and, I believe, the prices obtained quite satisfy those entrusted with it. It must, however, not be forgotten that the cost of carriage to this country was borne by the Canadian Government.

Two things are thoroughly impressed on my mind from the observations I had the opportunity of making at the Colonial Exhibition. The first is that I will never do away with the use of separators between sections; and the other is that the smaller the number of sections put together in one crate for travelling the better, and the less number of combs will then be broken.—JOHN M. HOOKER.

HIVE BLOWN OVER.

[744.] I would like to relate an incident that occurred the other day. I dare say, it will interest a few, and perhaps be of use to other readers of the *B.B.J.*, and I would be glad if you would inform me if I acted for the best, or how you would have proceeded?

On Wednesday morning (8th inst.), a lady sent word that her hive had been blown over, and asked if I would call and see if anything could be done with it. It appears that the bees were in a straw hive, which was inside a wooden bee-house, which had been blown over, and either in the fall or the picking up again the whole of the comb had broken away, and the hive had been placed over it. I found the greater portion of the bees had run up into the hive, but there was a great number on and among the broken comb. I took off the hive and turning it upside down, brushed as many of the stragglers as I could into it: I then took the hive into a room and left it as it was, *i.e.* upside down, while I managed the comb, which I did as follows: I brought all the comb into another room, and carefully picked out the solid portions (I may mention here that the bees were a swarm of this year, and the comb was very soft) and put them on one side. I then prepared some thin pickets, and taking a new hive I fitted the piece of comb in the best way I could by passing as many pickets as possible through comb and hive. Having got in as much comb as I could, which was less than half, I took the hive to where I had left the bees, and just shook them into it, and then returned to the bee-house. I recommended that the legs of the house be let into the ground, leaving the bottom of the house six inches clear. Now the question is, first, has the queen been killed? and if not, will the bees join up the pieces of comb at this season? I fancy they will if we have a few fine days (none so far, the 13th). Second, will they have enough honey left for the winter, and how can I find out? What will be the best way of feeding them? The honey that was left is being saved for that purpose.—GEO. WHALLEY, *Monmouth.*

P.S.—There was not a wooden hive available, or it would be simple.

[You did the best under the circumstances. The queen will most likely be present. It would have been better had you made sure by examining the cluster of bees before returning them to the combs. The stores will certainly be short. Give soft candy to carry on until the season is sufficiently advanced to give liquid food. The combs will be joined, but will be very irregular. The bees should be driven in the spring, hived in a frame-hive on foundation or combs, and the skep containing the brood placed over the frames, separated by excluder zinc so that the brood may be hatched out.—ED.]

BEE-KEEPING IN CANADA.

[745.] A young friend, lately arrived at Ontario, in his first letter to me, after having settled down, Nov. 20th, 1886, writes, 'A few days past I was at a show at Caledonia, but did not see any bees and hives (frame-hives) such as you have at Southall. The hives were very funny-looking objects, something like those of twenty years ago.' These are but a few words, but to my mind they let in a deal of light on a big subject, as they show that the principles sought to be thrust upon English bee-keepers by our late Canadian visitors are not general in their own home counties, or surely at a large show there would have been a sufficient display of frame-hives, amongst the many, to have rendered the presence of ancient hives alone, less remarkable particularly to a young man who is not, and never has been, a bee-keeper. One of these visitors, a year or two ago, sent all England crazy by introducing Cyprian and Holyland bees as the most gentle creatures on earth; and I, with hundreds of others, believed him, and I am sorry to say helped to propagate his report of them. English and Italian bee-keepers having spent hundreds of pounds on these bees, now wish they had never heard of them. So much for that craze; and I would only add, 'A word to the wise' *ought to be* 'sufficient for them.'—C. N. ABBOTT, *Southall, Dec. 15th*, 1886.

P.S.—I have just had a packet of seed of the 'great' American 'Chapman honey plant' sent to me with the warning kindly included that it is in plain English the 'globe thistle,' or in Latin '*Echinops sphærocephalus.*' Fancy a caricature of a Yankee riding *an animal* labelled 'British bee-keeper,' and holding a thistle in front of his nose! There are few who would like to be identified with the 'animal,' yet there are thousands who are willing to be ridden anywhere with an American craze in front of them, or a Canadian either.—C. N. A.

YORKSHIRE ASSOCIATION.

'Creatures which by a law in nature
Teach the art of order to a peopled kingdom.'

[746.] By this heading I do not wish you to suppose I am alluding to the Yorkshire County Association of Bee-keepers, about which I have felt it my duty to say something from time to time, but only to small Associations of individual bee-keepers, little aggregations of cells (not honey-cells) each of which contains a nucleus capable of growth and movement, protoplasmic activity, so to speak. The difference is marked. The Newlay Bee-keepers' Association would be quite another thing from the associated bee-keepers of Newlay, where two or three are gathered together, perhaps at a friendly meeting of a few select souls at each other's houses alternately, where bees and bee-keeping are discussed *con amore* under the douce influence of pipe qualified with 'a snifter of cough mixture,' as the American said.

I notice on p. 584 that, in celebrating its thirty-first birthday, *L'Apiculteur* makes the pregnant remark, 'Several groups of bee-keepers have been formed which eventually will be sure to develope themselves into bee Associations.' This must be our cue in Yorkshire, where our bee-keeping *paternity* is so chimerical and doubtful, waiting patiently for the dissolution of those bonds, for the complete oxidaton of the only link, which hold the creaking limbs together.

The horn has hung long enough at the gate of the giant's castle, still bearing the tempting legend:—

'Who on this horn a blast can blow,
Shall cause the castle's overthrow.'

The giant himself was invited out in your columns a fortnight ago by 'Black Bee,' in an interesting and cheering letter, in which he, as a member of the County Association, deplores the state of perennial syncope in which it drags on its days. Yet it seems its tottering ruins are not destined to crumble into dust by a blast of the Hon. Sec. on his own horn. The youngest neophyte of the Association, too, upon whom the Hon. Sec. kindly waited, and whom he personally instructed,

wrote you a week or two ago a nice letter, the prevailing tone of which betokened the orphan condition of bee-keepers in our big, straggling county, and suggested village clubs as strengthening plasters for the dilapidated and decrepit Association.

If the old wooden horse *have* contained warriors who earned immortal fame in a Yorkshire version of the siege of Troy, by all means let the useless framework now find an asylum in some honoured nook of our mental museum; but, on the other hand, if it has proved unequal to its task (by reason of the magnitude of the same) 'let us have a bonfire!' in the name of that same Guy Fawkes whose descendants reside not a thousand miles from the Hon. Sec. himself.

Why, however, is it that we can get no VOICE out of the gloom? Where is the champion? Courteous requests from Yorkshire bee-keepers appear from time to time in the columns of the *Journal*, supplemented by an angry urging; piteous whines are succeeded by longing desires: yet all, all in vain. The silence becomes awful and oppressive; the heavens are as brass. 'Alas, poor Yorick!' shire. The sheep are all over the shop, and the shepherd won't pipe; and so, if no one will speak in defence, why should not judgment go by default? We only want news.

No village clubs or branch Associations should be formed whilst the old one exists, for they would be only affiliations on an affiliation.

Our erratic condition reminds me of a week-day evening service during a village mission:—'Abraham,' said the parson, leaning over to the clerk in the 'singing pew,' 'Abraham, can we raise a sing?' 'Can we fly, sir? there isn't enew on us.' The flock was scattered, but it did exist. We must, *meanwhile*, I suppose, like the early Christians in the catacombs, or like the Covenanters in their mountain fastnesses, hold little hole-and-corner bee-services *chez nous*, in sure and certain hope of a 'Merry Christmas and a happy new *era*,' which I sincerely wish the Hon. Sec. and members of the Y.C.A. (this doesn't mean Young Men's Christian Association). —R. A. H. GRIMSHAW, *Horsforth, near Leeds.*

YORKSHIRE ASSOCIATION.

[747.] Being a Yorkshireman, I have been greatly interested by Mr. Grimshaw's endeavours to induce the Secretary or members of Yorkshire B.K.A. to inform their fellow bee-keepers of their doings. I myself have looked eagerly in these columns for a report of their shows or meetings, but have been disappointed. I visited the show this year at Sheffield and was surprised at the absence of the manipulations usually held at bee-shows; but as I learned the hon. sec. was ill at the time, I did not think so much about it; the show of honey was very small, and there was not a hive of live bees shown.

Like Mr. Grimshaw, I do not know a single member of the Association, and until Mr. Rushworth, in his letter (713) gave the name and address of the Secretary, did not know even that. Now, being a bee-keeper, though only on a small scale, I would willingly subscribe my mite to the Association if I could but learn that they were doing good work, and I think I could induce two or three more to become members; but when I ask any bee-keepers if they belong to the Association, they say they did not know there was one in Yorkshire: so wake up, York!—A. W., *Goole.*

NON-SWARMING.

[The following letter from 'A Scotch Bee-keeper' has been forwarded to us for publication. The remarks on non-swarming—the result of several seasons' experiences—will interest our readers.—ED.]

[748.] The time passes so quickly with our daily duties in city life that the attentions we owe our bees and bee friends are oftentimes overlooked, and to-day I find that you are waiting patiently for my views, as promised, on the important matter of non-swarming. In a matter of this kind a few interchanging opinions will do no harm, so as to compare the pros and cons of any system we may suggest.

In my own personal experience I have never kept more than six stocks of bees, the want of accommodation, and even time, preventing this. But I am intimately connected with some bee-keepers in Wigtonshire who have about 150 hives, and are able year after year to so regulate their swarming as to be able to exhibit very large supplies of honey at a time when many of our Scotch bee-keepers are only beginning to put on supers. In giving my own opinion, therefore, you have most important information from their experience, as their success has enabled them for the past three years to lift the premier medal for display of honey at our Caledonian Exhibition.

Some of your correspondent's remarks are quite in keeping with my own, as there are times when swarming occurs and we hardly know why. But the great object that I have before me is, how can we, as business men, manage to work a few hives for ourselves with *limited attention?* Something requires to be done, or our honey harvest will be poor indeed. The first point, therefore, with me is the style of hive, and after trying many designs none suit so well for my purpose as the 'Combination.' With this I can work from six frames to fourteen frames at pleasure, although during the swarming period I only keep as many frames in as suit a crate of twenty-one sections. Allowing, therefore, that my hives have wintered well, as early as possible in the spring I try to find out the state of matters as to food, &c., and begin, perhaps a few weeks before the fruit-blossoms begin, to stimulate a very little, gradually increasing as necessary. With the first examination it is important to look carefully over all the stock frames. Those uneven, or in any way a hindrance to free space, should be discarded and sheets of foundation inserted instead, just as we see the bees require. It is important that the frames be all straight. As the season progresses, and generally when ten frames are fairly covered, I place on a 21-lb. crate of sections, giving also full ventilation in front. The hives I prefer to be on moveable floor-boards, so that when the swarming fever is on, it may be raised bodily up to half an inch; this gives plenty of under ventilation while inducing them to take to the supers. Thus far, you see, we are all fairly agreed, still the style of hive and proper ventilation are the great essentials up till the swarming period. When I find that the bees are well into the crate of sections, the first fear is over, and a visit, say every second evening, shows the progress being made. *Bad weather has to be carefully noted, as if in this period three or four days* set in to prevent their getting out, *the risk is greater*, which induces the preparation for queen production. Then I find it necessary to make a careful examination of my frames. The crate is lifted off, and the divisional board taken out allows plenty of space to bring to the back of the hive all the frames, which can be carefully examined, and any cells cut out that are to be seen. In fact, this examination in time gives us a fair idea as to the ordinary state of matters, and when done satisfactorily we may generally pack up and be content with for the next eight or ten days. At the same time, if the crate of sections is fairly getting filled, a new one of the same size should be inserted on top of frames and the partially filled one on top of all, and, as it has been my fortune more than once, to be ready to lift off the top one finished. No. 3 can be inserted on the same method. This, you will see, is the production of comb honey, which is usually the only kind that townspeople like to work for. Those, however, who try the extracting, work in a little different manner.

Large apiarians have to do lots of things different

from us, and have in many respects neither the time nor inclination to take the general oversight in a periodical way: to act as I have suggested, the larger the number of hives, the risk is certainly the greater, hence no one who cannot attend properly to his hives should have more than he can give the utmost attention to. On this principle I have managed in some seasons to take off as many as two hundred pounds from two hives, while some veterans with large apiaries could get nothing but plenty of swarms, and perhaps not as much, from a dozen of hives for the whole season. Incidents do occur where we are defeated, and I know my friends have sometimes to return, time after time, swarms which come off when perhaps finishing some important sections. Their habit is to persist in throwing them down before the hive, noticing that room and ventilation are right, and if they come off again, repeat, and usually the second check suffices. Another important and useful plan is sometimes to interchange a few frames where overcrowding is taking place, and placing same in a hive more in want. This diverts the bees wonderfully, and the work entailed, even on a frame of foundation, attracts the great bulk of the restless workers to renewed work, while the supers are very little disturbed.

For the fourth year in succession I have experimented on one special hive in this way, and this year it has been the most valuable by far, while some of my best stocks, which I unfortunately overlooked after being away at some of our shows, swarmed twice, and, to me at least, were useless. One of these lost a queen and I did not notice it for some time time, as the swarming off when I was away made me think less about it. So a queen was sent me which came with a number of bees, nearly smothered, through the parcels post. I was thus in a fix how to act, but I hope to state, at another time, how I managed to introduce, with a hive of this nature, such a helpless company in a few minutes, which turned out to be a genuine method for direct queen-introduction. With your correspondent the details of such a subject need very extensive writing, and can only be thoroughly explained by practical manipulation; but it is evident, from the interest you evince, that you will take enough out of these hurried jottings as will satisfy you as to how much we can fairly do to assist ourselves with non-swarming. I should be glad to hear from you further. The age, &c., of queens I have not touched upon. A little diary of every hive is useful.—A Scotch Bee-keeper.

CODE OF DIRECTIONS IN JUDGING.

[749.] Following up my letter of December 6th on the subject of judging at shows, I will, with your permission, make a few further remarks, with special reference to the desirability of a scale of points, or code of directions, being drawn up by the British Bee-keepers' Association for the guidance of those who, like myself, are occasionally called upon to adjudicate at local shows. At present we are left to follow our own ideas, with the assistance of such hints as have been kindly given to some of us by the experienced judges who have been sent down from time to time by the B. B. K. A. to officiate at the county shows. For myself, I am under great obligation to more than one of these gentlemen for much valuable information and many useful hints. A few points occur to me on which particularly we need direction.

1. *Comb Honey.*—There appears to be a difference of opinion as to the sealing of sections, whether it should be as thin as possible, or otherwise. Thin sealing is the most difficult to obtain, and is certainly the best for present use, but thinly sealed sections will not keep so well as those more thickly sealed. Which ought to be encouraged for exhibition purposes? Then, other things being equal, is drone-comb, or worker-comb preferable? A gentleman of experience once told me that for *his own eating* he should prefer drone-comb, as there would be less wax, but that *for exhibition* he should prefer worker-comb, as yielding a smoother surface: but surely if drone-comb is better for eating, it ought to be so for exhibition, and in my opinion a crate of well-filled sections of drone-comb far surpasses one of sections filled with worker-comb in appearance. No doubt drone-comb has disadvantages in some ways to the producer, but if it is better, the skill of the bee-keeper should be shown in overcoming these difficulties. At any rate it is a point on which we want an authoritative decision.

2. *Extracted Honey.*—What about the colour? Is the lightest colour obtainable to be considered the best? I am told that this is so, but I confess that very light-coloured honey *looks* to me rather insipid, and, other things being equal, I should be inclined to give the preference to a richer, more golden-coloured honey. This, again, is a point on which we want direction. Again, is there any simple method of detecting adulteration in honey?

3. *Wax.*—What principles ought to guide us in judging wax? What colour ought it to be? Is there any certain means of detecting colouring matter, or other adulteration?

4. *Hives, &c.*—In judging hives, section racks, and other appliances, the judge's own experience must, I think, be his chief guide. Excellence of workmanship, quality of materials, correctness of size, simplicity of construction, &c., should be insisted on, and other points will occur to any one's mind on which directions might be given.

I would suggest that the B. B. K. A. should appoint a sub-committee of our most experienced Judges to draw up a code of rules and directions for the guidance of judges; that these should be issued before next season; that the committee of each County Association should nominate six or eight of their members, residing in different parts of the county, whom they consider well qualified to act as judges, and that they should be expected to be guided by the B. B. K. A. Code of Rules and Directions.

When this is done, all that can be expected will be accomplished towards ensuring uniformity in judging, but even then there will still be room for differences of opinion between different judges, equally competent to form an opinion.

I hope that the Committee of the B. B. K. A. will take this matter in hand.—Granville R. Bailey, *Madeley, Staffs., 18th December*, 1886.

WINTER PORCHES.

[750.] The chief use to which these are put is as an assistance to the bees in case of an attack from robbers in autumn, when the V-shaped passage is closed to the width of a single bee; and again (as their name implies), they are used when winter has fairly set in, to shelter the hive entrance from wind and weather, preventing also the reflected rays from the snow-covered ground entering the hive and thus tempting the bees out at unseasonable times. To both these uses there is a grave objection with the porch in its present shape, and unless this be overcome it were far better to discard the use of the porch altogether, and adhere to the modern recommendation of nearly closing the hive door in case of robbery, but having the doors at full summer width for winter ventilation. In case of robbery being on, numbers of bees alight on the winter-porch expecting to find the old opening, but its place being taken by the flat board of the porch, they wander about trying in vain to find an entrance down the chink through which they can hear and smell their comrades at work in the hive; very many thus perish in the chill autumn nights, for they have not sense to abandon the direct guidance of their auditory and olfactory organs in search of the new entrance in front of the porch, just as a foolish young

dog might struggle to get under a gate for a bone when he might easily leap over. The objection I name applies more forcibly in winter time and early spring, when the bees take their cleansing flights. I have found a whole line of chilled and dead bees at the chink. A further reason against keeping winter porches nearly closed for warmth, &c., is the difficulty of ascertaining the condition of the entrance as regards dead bees, and the danger of suffocation through the bees' inability to remove their dead along the passage. Without their use a glance at the doorway is sufficient.

Those who still prefer to use autumn and winter porches I would recommend to cut a notch in the upper piece of wood, thus:—

This would allow lost bees to enter, and would not seriously add to the difficulties of defence.—R. A. H. Grimshaw, *Horsforth, near Leeds.*

DEEP FRAMES.—FOREIGN BEES.

[751.] Mr. Simmins asks how many for or against frames deeper than standard. I have had a deeper frame in use since 1878, and this season, from eight stocks on such frames, I have taken nearly 800 pounds of honey. About a dozen on standard frames I used for doubling and setting as swarms, putting two and three together. This has always been the case with me; and a quiet old neighbour of mine, who thinks and acts, but never says a great deal, is going in for deep frames, which are all Mr. Simmins says of them; and, if deep frame stocks will, time after time, by the end of May leave those on standard frames so far behind as to be doubly as strong, no more proof to me is needed. While I am writing let me warn those who are rushing to foreignise their apiaries. I would say to them a little foreign blood will do your bees good, so buy an old queen or two if only just to see what beauties they will breed; and if you want to improve your race of bees, rear your queens from your best black stocks and take particular notice whether the foreigners or your own black stocks gather most honey, you will then know whether to go in for some more or not. I am aware, Mr. Editor, that this is treading on dangerous ground, and perhaps will bring a swarm of savage Italians or Cyprians round my head, but I have had a little experience in the matter, and can stand a sting or two, and will, if you do not say me nay, give you a pretty good ground for my opinion.—Robin Hood.

A CORRECTION.

[752.] Under the heading 'Irish Bee-keepers' Association' in your issue of the 16th inst., I have been reported to have said, in a paper read before the Association in Dublin on the 19th of last month, 'that the $4\frac{1}{4} \times 4\frac{1}{4} \times 2$ inch section would probably soon give place to one vastly inferior in every respect save appearance.' There is very little sense or meaning in that sentence, and the statement I made was very different. It was: 'That the 2-inch wide section had been beaten in the public estimation at the Colinderies by the $1\frac{1}{2}$-inch, a section of better appearance, but in every other respect inferior, and that it would probably soon give place to a section possessing all the good qualities of the 2-inch with the better appearance of the Canadian $1\frac{1}{2}$, that is, the $1\frac{3}{4}$ worked without separators.' The $1\frac{3}{4}$ is a favourite with the bees, a favourite with the public, and when we bee-keepers become more used to manipulate without separators, and have better experience of the time when to place those sections on, I think the $1\frac{3}{4}$ will become our favourites also. The error in quotation probably arose in condensing the paper for report.—Wm. Poxwell. *Richmond, Patrickswell.*

NOTICES TO CORRESPONDENTS & INQUIRERS.

Staffordshire Churnett Valley Bee-keeper.—The Committee of the British Bee-keepers' Association being elected by the bee-keepers of the United Kingdom will ever be pleased to entertain any project that will be favourable to the promotion of bee-keeping; and whenever the question of an addition to the present Standard frame is brought legitimately before their notice, they will no doubt bestow upon it their most earnest attention.

H. H. P.—The bees forwarded have no signs of any disease about them. The probability is that they had come to death in a natural way.

Business Directory.

HIVES AND OTHER APPLIANCES.

Abbott Bros., Southall, London.
Baldwin, S. J., Bromley, Kent.
Blow, T. B., Welwyn, Herts.
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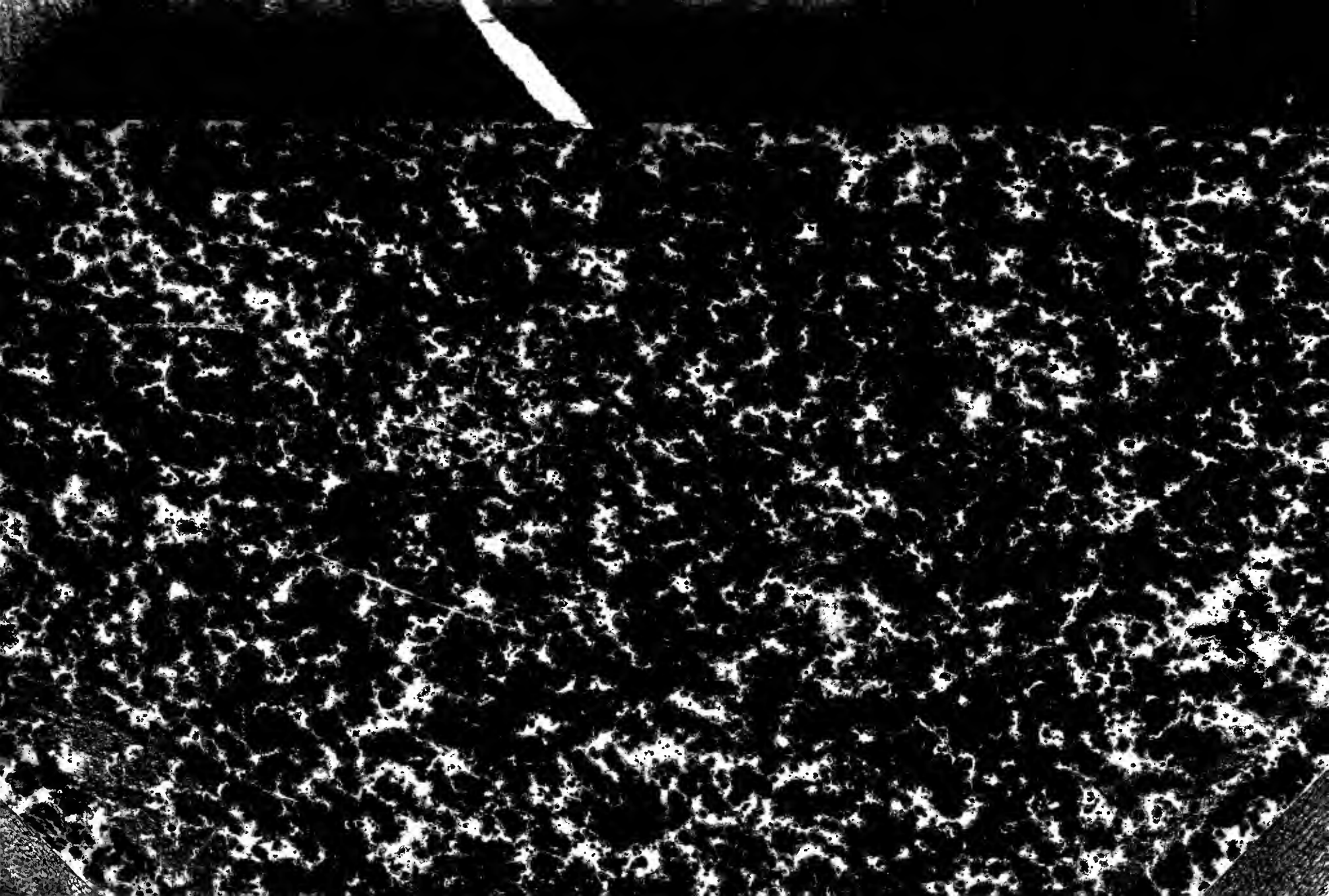
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